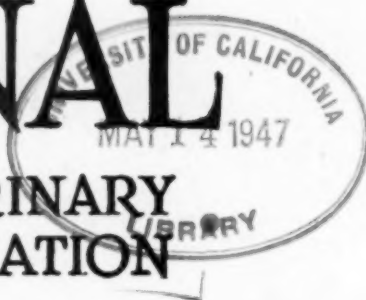


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# JOURNAL

OF THE

## AMERICAN VETERINARY MEDICAL ASSOCIATION



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**MAY 1947**

**Number 842**



## THE VITAL TOPSOIL

### Base, Background, and Prop of Self-Preservation

Arriving in Iowa from Pennsylvania in 1823, a pioneer whose descendants unto the third generation became world-wide authorities on the science, art, and economics of farming remarked: "*Civilization depends upon a vital topsoil, poor topsoil, poor people,*" and thereupon set out, by theory and practice, to make the Middlewest the livestock center of the world.

"Topsoil" fertility preserved by livestock farming as a means of improving standards of living, so vividly expressed in a few words by an Iowa patriarch 124 years ago, and the steadfast doctrine of veterinary medicine, is being extensively used as the theme of scholarly theses on world affairs at this late day—1947, but,

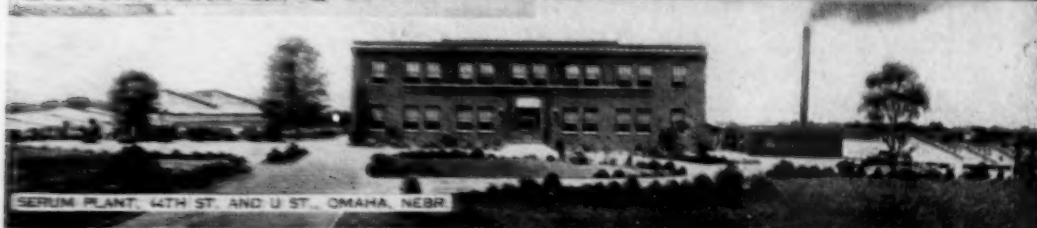
WHAT GUARDING THE HEALTH OF LIVESTOCK THROUGH HISTORIC SCIENTIFIC RESEARCH HAS DONATED TOWARD THE MARVELOUS PERIOD OF DEVELOPMENT STILL REMAINS UNWEIGHED AND UNNOTICED, EXCEPT IN THE INNERMOST COUNCILS OF THE VETERINARY PROFESSION—A SIGNAL TO THWART THE SHORTAGE OF FOOD AT THE SOURCE.



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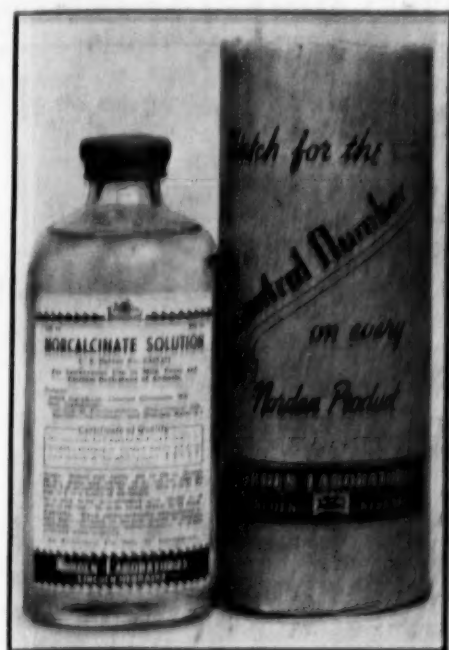


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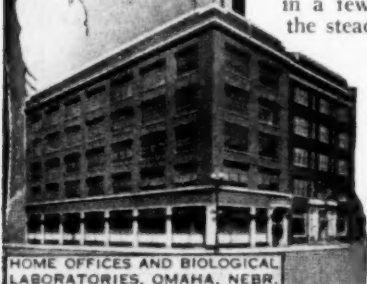
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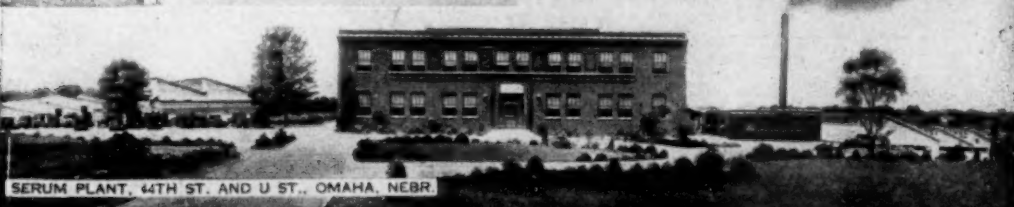
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# Journal of the American Veterinary Medical Association

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Way

Back

When



W

ay back when phonographs were still called "talking machines"—and often did their talking through a horn—in 1914, that's when some of the companies which are now divisions of Allied Laboratories, Inc., first put into print the previously initiated policy of

## *Sales to Graduate Veterinarians, ONLY*



That's why we say that that policy, now so celebrated, originated within this organization.

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Published in the Country Gentleman, June 20, 1914, this advertisement first publicly declared the policy of confining sales to members of the veterinary profession. We believe it also to be the first publicity ever attempted to teach laymen to discriminate between graduate veterinarians and non-graduates, empirics and "quacks."

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Sioux Falls Serum Co.

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# Journal of the American Veterinary Medical Association

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600 S. Michigan Ave., Chicago 5, Ill.

VOL. CX

MAY, 1947

NO. 842

## So, You Are a Member of the American Veterinary Medical Association

H. L. FOUST, D.V.M.

Ames, Iowa

SO, YOU ARE A MEMBER of the American Veterinary Medical Association. So am I. You and I, by that membership, have assumed certain responsibilities to our profession. I invite you to inspect closely with me some of the obligations we have assumed. I wish to explore, first, some aspects of our veterinary population.

### VETERINARY POPULATION

There are approximately 14,000 veterinarians in the United States, a fairly sizable number. Yet, in 1930 (when we numbered about 12,000), the complete professional personnel composed but 6 per cent of all gainful workers in the United States; and, of the professional group, physicians and surgeons composed but 5.5 per cent, dentists 2.4 per cent, and veterinarians only 0.4 per cent.\* So we are, in fact, very few indeed. Though our numbers are small, in comparison with other professions, we may be separated into groupings in accordance with the averages given in the annual report of the Special Committee on Postwar Planning for 1945 and those obtained in the AVMA canvass of 1942.

By comparison, the two groupings are fairly parallel except that 73 per cent of all German veterinarians were engaged in part-time meat inspection.

A glance at these figures reminds us of the complexity of our profession. Although

all of us aim for the same goals, we are heterogeneous in the details of our work. We are all veterinarians, yet the more intensely we devote ourselves to particular fields the greater is the gap that separates

Distribution of Veterinarians in the United States  
(based on the AVMA National Roster Survey of 1942)  
Compared with Veterinarians in Germany† in 1932.

United States		Germany
7,560, or 54%	In practice	4,972, or 66%
3,080, or 22%	Food inspection and state service	2,030, or 26%
980, or 7%	Teaching and research	391, or 5%
2,380, or 17%	All others	
	Army	190, or 3%
	Some form of meat inspection	5,506, or 73%

†Veterinary Bulletin, Lederle, 3, (March-April, 1934): 28.

us from other fields. Meetings such as this give opportunity for the creation of a unity of purpose, thus bringing us all closer together in our larger aims.

We need but turn to a copy of the AVMA Directory to find that our association has a grasp on the problems that a group of such diverse interests presents. On the one hand, we see lists of committee members whose duties are to study specific problems for their particular fields, and, on the other hand, those who are to study problems related to the welfare of the profession as a whole. The reports and addresses of our committees and of our discerning officers attest to the comprehension of our common objectives.

The needs for these various committees

Presented before the First General Session, Eighty-third Annual Meeting, American Veterinary Medical Association, Boston, Mass., Aug. 18-22, 1946.

\*Anderson, H. D., and Davidson, P. E.: Occupational Trends in the United States. Stanford University Press, 1940.

have not been ascertained over night. Theirs has been a gradual development. The words "new occasions teach new duties" have been well exemplified in the growth of AVMA activities. This ability to grow is one to be cherished. It means that we are living, moving forward, acquiring stature.

#### PROFESSIONALISM

The members of our profession cannot afford a lackadaisical attitude toward professional aims. This is one place in which the individual faces a "must" if he is to be a member of a great profession which is to give its utmost of service.

Our basic concept of democracy is built upon the community of interests which provides liberty of action to the extent that such action does not interfere with the well-being of the constituents of the democracy. Nationally and internationally, these days, there is difficulty in maintaining the concept.

As we ponder these things, we are ever impressed with our individual responsibility to our profession and with its importance in the economy of our nation.

#### RECENT ACCOMPLISHMENTS

In veterinary medicine, editorial writers in professional periodicals have enlightened us concerning the contribution made by the Veterinary Corps of the United States Army to the successful prosecution of the war. In the Merck report for April, 1946, Dean Kelser in an article, "Contributions of Veterinary Medicine to Victory," stressed the service for army animals, the inspection of food and dairy products for army use, the worth of the service performed by the Veterinary Corps for other countries, and the value of the knowledge gained by members of the corps of animal plagues in other countries and the application of this knowledge in preventing the spread of such scourges to the animals of this country. The efficiency with which civilian veterinarians "preserved and protected" the health of our food-producing livestock was also given prominent mention.†

Veterinarians may well feel proud of

†Among the several books which have been written citing the work of the medical profession during World War II are: *Doctors at War*, edited by Dr. Morris Fishbein; *The Doctor's Service at Home, in Industry, and at War*, by Dr. H. S. Diehl; *The*

their ability to cope successfully with problems, whether they are those in everyday needs or associated with the support of our country in a national emergency. In practice, in teaching, in research, in governmental animal-disease control, in food sanitation, and in commercial work, in every phase of which there was a shortage of civilian personnel, and in the work performed by veterinarians in our armed forces, we may feel proud of the high type of service we gave during World War II.

#### THE VETERINARIAN AND THE PUBLIC

How well are our services known among people who do not own livestock or pet animals? How well do those using the services of veterinarians actually understand what it means to be a veterinarian? Does the farmer know that in using hog-cholera serum and virus the mechanics of administering the serum and virus is but a small part of the process of vaccination? It is granted that a careful, observant livestock owner may feel pretty sure that his herd is a healthy one, which is one of the prime requirements for the successful outcome of vaccination. The serum may be of high potency and the virus of high virulence and antigenic properties, but, if the herd is not in good health, there may result actual loss of many of the animals treated and failure to produce the desired immunity. The farmer, the livestock owner, must be given the whole story. He must know that vaccination is more than a mechanical process and that the veterinarian has the training to determine the suitability of an animal for prophylactic treatment.

The veterinary profession must accept the responsibility for informing the livestock owners what part the veterinarian must have in maintaining healthy herds.

The Associated Serum Producers, Inc., through a series of advertisements in papers read by livestock owners, and through radio programs, give much valuable information to the public. Radio programs and news releases sponsored by our own American Veterinary Medical Association extend the knowledge about the services the veterinarian has to offer.

"Pattern for Penelope" and "Crossroads

*Doctors at Guadalcanal and Tarawa*, by Capt. F. R. Moore, M.C., U. S. Navy; and *The United States Public Health Service in the War*, by Dr. Thomas Perron, Surgeon General of the U. S. Public Health Service.

for Penelope," by Mary Wolfe Thompson, appeal to a group not reached ordinarily by the two programs mentioned above.

These three of several similar activities illustrate what is being done to acquaint the public with the work of veterinarians. Persistence and vigilance in interpreting our work should be deeply woven into our professional consciousness.

#### INTERNSHIP

Baffling problems confront the practitioner who is a recent graduate. The excellent laboratory instruction in our college clinics unquestionably provides basic background but cannot be expected to supplant actual experience in meeting problems of an everyday practice.

Dr. Suits, writing in the March-April, 1946, issue of *Haver-Glover Messenger*, says: "We older practitioners know that it is possible to go from school directly into practice and by trial and error finally become established, but most of us will agree now that it is the hard way." In his article, he makes a plea for internship for the recent graduate. He points out the benefits accruing mutually to the intern and to the preceptor and says that "another obligation the practitioner who has sincere interest in the welfare of his profession must assume is that of helping new graduates get the feel of actually contacting the hazards of beginning practice."

In teaching, in research, in industry, in public health work, the recent graduate receives apprentice-type of training in preparation for the responsibilities of his job. It seems incongruous indeed to expect the recent graduate in veterinary medicine to be more able to assume the work of a practitioner than the graduates entering other fields of the profession.

In many communities, it is becoming the general procedure for the recent graduate to do what amounts to a period of internship previous to entering practice for himself. This tendency is commendable. In cases in which for various reasons the post-graduation periods may not be convenient, summer quarters during the student's training might provide a time for this valuable type of training.

#### PERSONNEL

In contemplating our profession, we are concerned with replacements, with main-

taining our present "place in the sun," and looking toward further usefulness. As members of the veterinary profession, we are anxious to have young men coming along to fill gaps as they occur in our ranks. We are concerned that our successors be at least as well trained as we to maintain the traditions of our profession; yes, if we are to progress, they must be better trained. At the moment, new schools are in the offing. There are many more applicants for admission than can be accepted and properly trained by the existing colleges. This condition is closely related to the effects of World War II upon men who, because of the emergency, were not permitted to continue their educational training. Certain federal GI benefits also enter the picture. For the next few years, there would seem to be sufficient enrollment in our colleges to replace veterinarians lost by death, retirement, and other causes and for a limited number who will extend their usefulness to render a more complete veterinary service.

By complete veterinary service, we mean that all animals (including poultry) which contribute to the well-being of mankind be provided with adequate veterinary service and that all food products originating from these classes of animals be provided with adequate safeguards to guarantee their suitability for human consumption.

Our colleges have the grave responsibility of preparing veterinarians not only as clinicians for our great livestock population but also to train veterinarians to care for poultry, for pet animals, and for fur-bearing animals, and to train veterinarians for the sanitary service which has supervision over the production of food of animal origin. College men must possess broad vision if they are to contribute their share in meeting the responsibility of maintaining a healthy, growing profession. A guiding stimulus should be an attempt to educate veterinarians qualified to meet tomorrow's needs.

If we study the veterinary population in the United States during the years of the current century, we are impressed with its relatively slow increase in numbers. Actual increases appear to parallel farm livestock numbers and values fairly closely. This condition points to the need for a critical study of the number of veterinarians necessary to provide an adequate service for all farm livestock, for poultry, for



pet animals, for fur bearers, and for a sanitary service for the food products of animal origin.

So long as our present economic level persists, or at least falls but slightly, it may be predicted that a sizable number of students may continue their interest in preparing for veterinary medicine as a life work. It behooves us, then, to be aware of economic trends as they may affect our future.

Medical care of the human family is continuously being studied by the American Medical Association. One who reads the records of the hearings on the Murray-Dingell-Wagner bill, on social security, and social insurance is impressed by the determined effort (under the veil of a more complete medical service) to give to certain government departments control over the administration of medical care to the family. The members of the American Medical Association believe that this can better be accomplished by the individual practitioner. They are not averse to supporting certain "prepaid medical care plans," and in their journal for March 30, 1945, there is a report covering the increase during the previous year of 20, thus bringing the total to 53 plans in operation in June, 1945. These plans were operating in 25 states. Many of them are in the experimental stage and are proving quite satisfactory. A type of service which provides opportunity for the client to choose his physician and for individual competition among the members of the profession appears to be acceptable to the practitioners of human medicine.

In a recent issue of a livestock journal<sup>§</sup>, an editorial plea was made for 2,500 county veterinarians. Personally, I can see a need for this type of service in marginal and submarginal areas. However, in areas fairly well supplied with veterinary service, it seems to me there is great danger of a tendency toward a control of our profession similar to that offered for human health by some of the bills recently presented to Congress.

If we veterinarians are to maintain a reputation as a profession, we must persist in our studies of the needs for veterinary service, continue to meet the needs of a complete veterinary service, and show evidences of continuous growth by the exten-

sion and betterment of our usefulness and by numerical increase. Any alternative is fraught with danger to individual endeavor.

Apropos to this are some words<sup>||</sup> of Eric Johnston, past president of the U. S. Chamber of Commerce: "It is no accident that capitalism has flourished in America. Americans have always demanded freedom. And freedom and progressive capitalism are synonymous.

"Our new capitalism calls for . . . equal opportunity for all. But there can be no equal opportunity without fair competition . . . competition which provides opportunity for ideas, for leadership, for thinking. It is competition which sets inventive minds to work; it is competition which puts one community on its mettle to outdo its rival in municipal improvements. It is competition which holds prices at reasonable levels. It is competition which makes for better living.

"Competition is the carat mark of the real gold of golden opportunity. Competition as we here in America should know it, should stimulate but never stymie opportunity."

No one questions that the general practitioner is the core of our veterinary profession. So long as we have general practitioners we must have competition. This competition about which we have been speaking must, in the future, be a kind of competitive coöperation. Since no one individual can stand alone, and since the function of the veterinarian is service, he must depend on his fellow veterinarians to coöperate with him in providing an adequate and complete service. And it must be remembered that most frequently the effects of the services rendered by the veterinarian are not confined to the owner or owners as individuals but as members of a society in which both owners and veterinarians are integral parts.

In closing, I make the appeal that you and I, as members of the AVMA, accept the responsibility of maintaining our American heritage—the right of free competition. May our idealism for our profession transcend purely personal gain and be as broad as that of Acestes, who in Virgil's Aeneid shot his arrow into the blue and received his prize for the burning pathway it had made for humanity.

<sup>§</sup>Breeder's Gazette, 111, (Aug., 1946): 30.

<sup>||</sup>Think, 12, (1946): 15-16.



# The Mexican Outbreak of Foot-and-Mouth Disease. III.

(Readers are referred to the March and April issues of the JOURNAL for a complete summary of previous developments)

At a conference of Mexican and United States officials in Washington on March 15, 1947, held to discuss the financing of the joint campaign against foot-and-mouth disease which had been authorized by Congress, the conferees studied estimates of materials, equipment, and personnel that would be needed for an effective operation against the disease in Mexico through June 30, 1947. It was shown that the total costs to the Mexican government up to that time, from the beginning of the outbreak, would amount to about \$9,350,000 and it was accordingly recommended that the United States contribution for the period should be \$9,000,000.

Among the anticipated costs were \$1,500,000 for indemnities on 150,000 cattle to be slaughtered by June 30, 1947; \$1,750,000 for indemnities on about 100,000 hogs, sheep, and goats that must be slaughtered in the infected and quarantine zones; operational expenses of the Mexican government of about \$7,600,000, and for the United States of about \$1,500,000. Mexico has been employing some 15,000 Army troops for quarantine and other duties in connection with the outbreak and intends to increase this number to about 25,000; this expense has been the major cost to date, accounting for three-fourths of Mexico's monthly total of about 6 million pesos.

The recommendations of the conference were summarized in the following resolutions and have been confirmed through an exchange of diplomatic notes between the Mexican and United States governments.

## RESOLUTIONS

### WHEREAS,

In accordance with the resolution of the Mexican-United States Agricultural Commission of March 6, 1947, Licenciado Oscar Flores, Mexican Under Secretary of Animal Industry; Adolfo Alarcon, Agricultural Attaché of the Mexican Embassy; and Ignacio de la Torre, representing the Ministry of Agriculture and Animal Industry of Mexico; and Dr. W. V. Lambert, Administrator of the Agricultural Research Administration; Dr. B. T. Simms, Chief of the Bureau of Animal Industry, and Dr. John A. Hopkins, of the Office of Foreign Agricultural Relations, representing the U. S. Department of Agriculture, have made a care-

ful estimate of expenses incurred by the Mexican Government since the outbreak of foot-and-mouth disease in Mexico, and probable expenses to June 30, 1947, and also of the probable expenditures of both Governments neces-



Dr. M. S. Shahan

sary in order to carry out an effective campaign up to June 30, 1947, and

### WHEREAS,

Mexico is incurring expenses for services, equipment, supplies, and personnel which are estimated to amount to \$7,600,000 to June 30, and will be responsible for indemnities to be paid for slaughter of hogs, sheep, and goats which will amount to a sum of approximately \$1,750,000, making a total Mexican contribution of \$9,350,000 for this period;

### It Is Recommended:

1) That the United States contribution for this period should consist of expenses for equipment, supplies and personnel, etc., amounting to approximately \$1,500,000, plus indemnities of \$7,500,000 for cattle slaughtered, making a total of \$9,000,000.

2) That any salvage recovered by Mexico from animals slaughtered during the campaign should be used in the joint campaign in addition to the services already rendered by Mexico.

And with regard to the continuation of the joint program for eradication of foot-and-mouth disease after July 1, 1947;

## WHEREAS,

Mexico hopes to continue its expenditures at approximately the same rate as during the months of April-June 1947, but foresees that it will not be able to increase this rate of expenditure,

*It Is Further Recommended:*

That, if a fully effective program of eradication is to be carried on during the succeeding 12 months, the United States Government be prepared to increase its rate of expenditure, the amount of such increase to be dependent on the total expenditure necessary for the period from July 1, 1947, to June 30, 1948.

**JOINT ADMINISTRATIVE OFFICE  
SET UP IN MEXICO CITY**

Carrying out the recommendation adopted by Mexican—United States conferees on March 6, administrative headquarters for the cooperative campaign have been established in Mexico City. A USDA release dated March 28, 1947, announced the appointment of Dr. M. S. Shahan, Pathological Division, Bureau of Animal Industry, as codirector of the office; the director will be Licenciado Oscar Flores, Mexico's Under Secretary of Animal Industry. These appointments also are in conformity with the recommendations of March 6.

As United States members of the joint administrative board, Secretary of Agriculture Anderson has appointed Bureau Chief B. T. Simms, Under Secretary of Agriculture N. E. Dodd, and Don Stoops, assistant agricultural attaché, U. S. Embassy, Mexico City. The board members named by the Mexican secretary of agriculture are Dr. Jose Figueroa, Dr. Francisco Rubio Lozano, and Sr. Ignacio de la Torre, all of the Ministry of Agriculture and Animal Industry. Lic. Flores and Dr. Shahan are *ex officio* members of the board and, as director and codirector of the administrative office, are responsible to it. This board will determine the operating policies and procedures in the foot-and-mouth disease campaign.

Dr. Shahan's appointment follows his previous close connection with developments in Mexico. He was the leader of a group of four U. S. Government veterinary experts who cooperated with Mexican veterinarians in confirming the diagnosis of foot-and-mouth disease in Mexico and in estimating the extent of the outbreak when it occurred late in 1946. Since then he has continued to work closely with Mexican

officials in planning measures for control and eradication of the disease.

**VIGOROUS CAMPAIGN TO BE CARRIED ON**

Now that full cooperation has been provided for, including financial assistance, it is anticipated that the eradication work inaugurated by Mexican officials will be stepped up. It is reported that all susceptible livestock in a zone about 150 by 250 miles, centering near Mexico City, is being slaughtered. No appreciable salvage during the first three months of the campaign can be counted on according to Mexican officials, since a large proportion of the first cattle slaughtered would be infected or within infected areas and, therefore, not safe to move. Outside this area (see map on page 149 of the March JOURNAL), infection is spotted, and only diseased herds are being destroyed, according to reports.

On this side of the border, the embargo against all Mexican cattle imports, in effect since Dec. 26, 1946, has resulted in higher prices for grazing steers and heifers. Close to a half million head of cattle annually had previously been shipped into the United States from Mexico, many of them consigned by American ranchers south of the border.

**URGENT NEED FOR VETERINARIANS**

Dr. S. O. Fladness, in charge of the BAI Field Inspection Division, in a letter dated March 31, 1947, points out the very real need of the Bureau for additional veterinarians at this time, especially in view of the necessity of sending a number of veterinarians to Mexico to assist in the suppression and eradication work. Since the veterinary personnel of the Bureau was depleted during the war, it is important that a number of veterinarians be recruited to avoid further crippling of disease-control projects at home.

Those veterinarians who have had one year or more of veterinary experience are eligible for appointment in grade P-2 with an entrance salary of \$3,397.20 per annum. Those with less than one year of experience may be appointed initially in grade P-1, entrance salary \$2,644.80 per annum, but may be promoted non-competitively to grade P-2 upon satisfactory completion of four to six months' service. Interested veterinarians should communicate directly

with the Bureau of Animal Industry, USDA, Washington 25, D. C.

Veterinarians are urged to consider accepting fulltime employment in the Bureau during this emergency situation. By so doing, they will be rendering a distinct service to the livestock interests in the United States, who are looking to the Nation's veterinary personnel and agencies to guard against invasion of foot-and-mouth disease and, at the same time, to carry on the important animal disease-control projects now under way in this country. The

profession should give prompt and wholehearted response to the Bureau's plea for help.

*Meat Banks.*—The city family of the near future will deposit meat in the bank like it does money, and check it out as needed, the banker keeping tab of the balance on hand; that is, the locker plant system is moving to town to keep up with the folk of the smaller centers. Such a bank operating under the state banking laws is operating in Memphis. It has bonded tellers who receive and disburse the deposits.

### President Truman Signs Foot-and-Mouth Disease Bill



—Associated Press Photo.

Shown with President Truman are (left to right)—Rep. Walter Granger, Utah; John Heimbarger, secretary to the House Agriculture Committee; Rep. Sid Simpson, Illinois; Rep. George W. Gillie, chairman of the House Agricultural sub-committee in charge of foot-and-mouth disease investigation and sponsor of the bill, authorizing the Secretary of Agriculture to cooperate with Mexico in combating the disease; Rep. Ernest Bramblett, California; Rep. Eugene Worley, Texas; (these are the members of the sub-committee of the House); Sen. Arthur Capper, Kansas; Sen. Edward Thye, Minn. (behind Sen. Capper); Sen. Clyde Hoey, North Carolina; Sen. James Kem, Missouri; Dr. B. T. Simms, chief, Bureau of Animal Industry, USDA; James Kendall, clerk, Senate Agriculture Committee; Keith Himebaugh, director, Office of Information, USDA.



# Status of Foot-and-Mouth Disease Vaccination in Europe

## TO THE EDITOR:

On page 50 of the January, 1947, issue of the J.A.V.M.A., a report of Dr. W. N. Swangard states that Switzerland is the sole source of effective foot-and-mouth disease vaccine for the world. I believe Dr. Swangard is in error in this statement because I know that Denmark, Holland, and Italy were producing the same product during this period.

This foot-and-mouth disease vaccine was first produced in 1937-38 at the Staatliche Forschungsanstalten Insel Reims near Greifswald in Pomerania by Professor O. Waldmann. Its first use on a large scale was in 1938-39 during the European panzootic of 1937-39. Some 500,000 animals in the provinces of Silesia, Mark Brandenburg, and East Prussia were inoculated. In the calendar year 1939, approximately 6,000,000 animals were immunized against the disease in all Germany.

The procedure for manufacture has not materially changed since the beginning. The usual method is to use monovalent vaccine for a given outbreak, after preliminary typing of the virus for the specific outbreak. Some progress was made in the development of a bivalent vaccine using virus types A and B (Waldmann). Least success was attained with a trivalent vaccine using types A, B, and C. Vaccine produced in Germany has been used in other European countries with success. The German laboratory at Reims ceased producing vaccine temporarily at the end of the war but is again in operation.

A recent communication from Holland states that, since the war, 300,000 animals have been inoculated with vaccine produced by their laboratories with extraordinary success. The Dutch institute has recently been enlarged to produce sufficient vaccine to allow them to inoculate all of the cattle in the country and also to place important quantities at the disposal of foreign countries.

Attached is a copy of a resolution concerning foot-and-mouth disease prepared by the International Institute of Epizootics [title translated] in Paris, together with a program for the preparation and distribu-

tion of foot-and-mouth disease vaccine by Denmark, Italy, Holland, and Switzerland. This latter information was contained in the October-December, 1946 Military Government Veterinary report prepared by this office and forwarded to you.

FRANK A. TODD,  
Lieutenant Colonel, V.C.  
Chief of Section.

Incl.

## Resolution Concerning Foot-and-Mouth Disease\*

1) The International Office of Epizootics recognizes the efficacy of vaccination against foot-and-mouth disease, the value of the vaccine being established simultaneously by a strict experimental control and a long practical experience.

2) Each country should have an organization permitting [it] to track down every infection center of the disease as soon as it appears and permitting combat against foot-and-mouth disease either by the combined method of vaccination and sanitary police or by the stamping-out method.

3) The vaccination should be organized and directed by the official veterinary services in order to constitute a method of combat against the menacing disease.

4) Each country should have, at all times, a reserve of vaccine the value of which is officially recognized and should be able to renew this reserve as required.

5) In order to impose barriers to the invasion of the disease, it would be desirable that countries which have common frontiers, where no natural obstacles exist which could stop the progress of the disease, should maintain on both sides of these frontiers a strip of land from 5 to 10 km. where all the animals would be vaccinated yearly.

6) It is recommended that each country itself produce the anti-foot-and-mouth disease vaccine which it requires.

It is indispensable that an international understanding should be carried out in order to insure swift preparation, distribution, and utilization of the vaccine.

Finally, it is indispensable that an international understanding should be carried out in order to insure, from a practical point of view, the generalization of combat against foot-and-mouth disease even if the disease has an insignificant form or exists only in a few infection centers.

7) The animals vaccinated against foot-and-mouth disease and coming from disease-free areas can be admitted for interzonal traffic.

\*Made by delegates of 34 countries meeting at International Office of Epizootics, Paris, Oct. 4, 1946.



### Arrangement Concerning Preparation and Distribution of Anti-Foot-and-Mouth Disease Vaccine

As a result of the resolution passed by the International Office of Epizootics in Paris on Oct. 4, 1946, the official representatives of the European countries who, so far as the International Office of Epizootics knows, produce anti-foot-and-mouth disease vaccine, i.e., Denmark, Italy, Holland, and Switzerland, have, at the initiative of the said Office, met in Bern on Nov. 20 and 21, 1946.

In order to insure as well as possible the practical realization of the said resolution, they have mutually agreed on the following:

1) They have unanimously recognized the necessity to organize, on an international basis, the supply of anti-foot-and-mouth disease vaccine.

2) In order to facilitate and insure the delivery of this vaccine and thus encourage animal breeding, the delegates of the countries represented have requested that the International Office of Epizootics function as a central body of information on the state of stocks.

3) The represented, producing countries commit themselves to indicate, each month, the state of their stocks to the Office mentioned above to which the authorities of the interested countries can apply for necessary information. These authorities can also apply directly to the institutes which are capable of supplying the necessary vaccine.

4) The represented countries commit themselves not to deliver anti-foot-and-mouth disease vaccine to foreign countries unless a request is made or recommendations are given by the veterinary authorities of the receiving countries.

5) The anti-foot-and-mouth disease vaccine, of tested efficacy, covered by the present arrangement, is a vaccine microbiologically sterile where the virus is attenuated through absorption on colloidal aluminum hydroxide and proper action of heat and formol.

6) It should contain in each average dose for large livestock 0.2 Gm. of infectious virus for bovine animals with a minimum dilution of 1:1 million.

7) The vaccine should be bivalent and contain the two types O and A Vallée (or A and B Waldmann).

8) The countries represented state they are in a position to produce yearly and in normal conditions the following minimum quantities for export:

Denmark .....	150,000 liters
Italy .....	20,000 liters
Holland .....	60,000 liters
Switzerland .....	30,000 liters

Total ..... 260,000 liters

The total production corresponds to 5,200,000 doses for large livestock.

The represented countries confirm that the vaccination can only be effective in liaison with the sanitary police measures which the

circumstances demand and which should be organized and directed by the official veterinary services.

Bern, 22 November 1946.

signed:

O. HALL, for Denmark.

PROF. UMBERTINI, for Italy.

E. J. A. A. QUAEVLIJG, for Holland.

FLUCKIGER, for Switzerland.

### Canada Grateful for U. S. Action

"What threatens American borders also threatens Canada." So says the editor of the *Canadian Journal of Comparative Medicine and Veterinary Science* (Feb., 1947). He continues: "We have reason to be thankful that the Government of the United States within comparatively recent months had wisdom enough to reunite its divided veterinary services and to place the consolidated Bureau of Animal Industry under the control of a distinguished veterinary scientist who is an able administrator. This intelligent move was made in the nick of time, and Canadians may be exceedingly grateful as it offers one of the best protections against foot-and-mouth disease invading the United States and consequently being brought into close proximity to Canada."

### How Big Is the Dog Industry?

At an important conference of dog fanciers and bench-show officials in Chicago in March, a prominent veterinarian signalized the production of 13,000,000 dogs as a major livestock industry (patronized by the best people, largely in behalf of their children), a dependable outlet for farm products, and a purchaser of manufactured trappings and equipment running into big figures. Dogdom was advised to board the livestock bandwagon and ride high into the research, educational, legislative, and recreational spheres for a hearty welcome, or else. Nothing except public support can assure sustained promotional programs in these fields. One has but to recall the brilliant Mill Hill distemper research in the late 1920's, which required several years of expensive begging to finance and which stopped cold, short of the goal, when funds ran out. Only government can be trusted with the technical side of animal production.

# Historical Sketches and Memoirs

## III. The General Practitioner

(Continued from April Journal)

L. A. MERILLAT

Chicago, Illinois

### 30.

This private practice whose building plans were stopped cold by the replacement of the buggy horse with automobiles had considerable influence on the nation's veterinary educational system, not only by practice methods, teaching, and association work, but through reforms brought about in the operations of the Chicago Veterinary College where we held three major chairs. Before agreeing to rejoin the faculty he had left nine years before, philosophical Jim Wright insisted that the teaching staff be formed into a democratic body charged with shaping the curricular functions: entrance and graduate requirements, branches and hours, ability of teachers, and teaching methods, as distinguished from purely fiscal affairs. Agreed! A. H. Baker, the senior member, was elected dean. Regular staff meetings were held and important dies were cast which were found expedient by other schools to copy. Backward steps were voted out against the wishes of the fiscal department which, being the minority, found they had hold of the proverbial bear's tail. This legally organized collegiate group never surrendered a foot of ground. It no doubt accounts for the success of the CVC during the rest of its life—twenty years. Here, we began to be looked upon as stooges of the state schools—a rating never lived down during the private school era.

### 31.

The climax came in 1917 when the AVMA voted to stretch the approved course of study to four years and made high school credentials necessary for admission. Being secretary of the AVMA when the upsurge came, I was openly denounced as "a traitor in the ranks," that is, charged with double crossing the group to which I belonged. Having consistently stood for higher educational standards, the ugly indictment seemed justifiable. In the final analysis, however, the

sin committed was pleading with colleagues to do with honor what they were going to be forced to do later with less credit to themselves. The American part of the veterinary profession has been so little concerned with its history, that turning somersaults over this boastful detail is not expected. I am merely trying to prove again that history *does* repeat itself. By 1917, in the push toward a four-year course, the difficult push toward a three-year course twenty-five years before had been totally forgotten. The realization that stopping a trend is no more possible than holding back a steam roller with the index finger is what I am trying to stress. Traitor, forsooth! The general practitioner group to which I belonged was behind the forward movement to a man. Leastwise, in my travels, I never found a dissident among them. That is what I am obligated to put in the records. Certainly, no thesis on "The General Practitioner" would be complete without disclosing his attitude toward education and citing an outstanding incident to prove on what side of the movement he stood. *It was always easy to get practitioners to vote against their alma maters on issues advantageous to their professional standing.*

During the first two decades of this century, while the two groups of colleges were see-sawing for supremacy, it was pitiful to see how little support the private group could muster from their alumni, including most of their respective faculty members, the majority of whom were general practitioners—stooges of the state schools if you desire. All, however, believed that their work and enterprise was a national need. The ability of the public veterinary schools to assume the full responsibility of furnishing a sufficient veterinary personnel was not reassuring—and that, after nearly thirty years, still holds good. The new veterinary colleges (California, Illinois, Missouri, Georgia) in the making prove that the private educators were pretty good

prophets. In short, there were good arguments on both sides of the private-state controversy that can't be laughed at or off.\*

## 32.

At this point, the reader must be aware that Wright & Merillat is but a figure (a pattern) taken here to illustrate the evolution of American veterinary medicine since the turn of the century. Just a It lived and worked close to, and Figure through, the forty-six years involved—in private practice, public service, teaching, associations (local, state, national, international), politics, and livestock sanitary science without sacrifice of social life. Out of its doors went many a young man to make a mark for himself: Hubbell, Franks (C. C.), Barrett, Lane, Crowe (T. B. and Chas.), Kroner, Schaffter, Black, Matson, Oderkirk, to name a few who learned by example the techniques of practice, good behavior, enjoyment, and administration, and that life can be beautiful even in the buzzing atmosphere of a large veterinary practice. Life is what you make it.

## 33.

The automobile engulfed the big town practitioners like a tidal wave and the wreckage is yet to be all cleared up. Leastwise it shattered our hopes of building the finest veterinary hospital this side of the farthest horizon. At first, the despair didn't seem to be incurable. With the light and heavy harness prodigies off the street, there was but to turn more seriously to work horses and feel out the prospect of associated dog practice. Work horses of the lower types, which we once only tolerated and left to assistants, became welcome; and a kennel room was built. It had nine wooden cages, four below and five above, wire doors, cement floor, scalding hot water, and a drain pipe to keep it clean. It was a dud. Too few came to turn their dogs over to the mercy of our hostlers, and too many who did patronize the luxurious ward were prone to leave their precious pets on our hands, never to return. That forever ended my fling at canine medicine. While the work horses were gradually vanishing, veterinary practices in large cities dropped to

the level of one-horse affairs. Hospitals were gone forever.

## 34.

My partner was never perturbed. He simply purchased a fine home and orange grove in Florida and left the burden of carrying on exclusively in my hands. Matters were quite different for the junior partner. I had no fortune to fall back on. Our unfinished building and the dubious prospects plus some savings were not enough for a life in retirement. So, I purchased a 100-acre farm in Ohio, feeling I could always plow and harrow and pitch hay for a living. That was my boyhood training, anyhow. But, the venture proved to be more of a hobby to perfect soil, to improve buildings and fences, and to raise purebred livestock than a source of revenue. Berkshire hogs, Holstein-Friesian cows, and Percheron horses were the specialties chosen. Twenty-five years a veterinarian had made me breed-conscious and scientific. I knew everything about farming except that it's a rat hole for money. As long as the Wright & Merillat business held up in Chicago everything was rosy. Although, hired hands 300 miles away were not too dependable. The investment having reached sizable proportions, Mrs. Merillat had to spend more time on the farm than in kitchen and church work. Although she did become successful with cows and hogs and poultry, there was always more red than black on the balance sheet. Never to this day has Ma ceased to boast about the money she added to the Merillat millions down on the farm. (I hope she never reads this.) By the simple process of putting the income in the local bank and sending the bills to Chicago for payment, things did look rosy at The Meadows (our name for the farm). Doc! Think twice before you buy a farm.

## 35.

Meanwhile, W. & M. carried on always safely solvent. Then came the first world war and two years of military service abroad. With three foreign governments buying thousands of horses in Chicago, business was excellent; 1916-1917 were our best years. (Armies were not highly mechanized until Hitler went crazy.) Besides, I was on top of the world—prac-

An  
Orange Grove  
and  
a Stock Farm

\*If these sketches and memoirs prove to be of sufficient interest and space permits, details of my private-veterinary-college experiences will be published.

The  
Unknown  
Graduate  
School

Shattered  
Hopes



tice good, secretary of the Illinois association and of the AVMA, and running a graduate school of surgery, of which few of this day have ever heard. Feeling certain that town practice was doomed but that good surgery would remain useful in country practice for a long while, I conceived the idea of founding America's first graduate school of veterinary surgery, and did. The determination to do so was strengthened by a surgeon of the Chicago Polyclinic over on the near north side. Knowing I had been doing a lot of sanguinary work all over the country, he assured me that it would be a good paying business if veterinarians were like physicians. "Here is the way it works," he said. "Just pass the word around that you take in graduate students, charge a moderate fee, and let the doctors go and come much as they please, and by no means let the curriculum spoil the pleasure of their visit to the big city for a couple of weeks." I construed the hunch to mean that a small but continuous stream of graduate students would be derived from doctors who wanted a rest or an excuse for taking one, maybe a reprieve from an exacting spouse. If the latter is not categorical fact, it is hearsay that perhaps can't be applied to veterinarians, for, if the percentage of nagged doctors were the same, the number would be too small among veterinarians as a business proposition. Anyway, the effort was not disappointing. Graduate students came and went, but the experience was too short to draw definite conclusions. I do believe, however, that if Tom Ferguson of Lake Geneva or Bill Stroup of Corinth advertised for graduate students they would make more money than by pumping penicillin or roping mules. And, what a plum for Jim Farquharson! This escape from the auto menace was one of the sidelines of 1916-1917 that never made the headlines. Writers on the history of veterinary education will please record the natal demise of the Chicago Post-Graduate Veterinary School at 1827 Wabash Avenue, that was cruelly stricken down by a world war. Doctors came to our clinic as a rule to learn one or two things,—like the radical operation for poll evil, William's ventriculectomy, or the spaying of mares or cows. We found that when the desired technique was learned, all further interest in the course wilted. What they did about town was none of our business.

(To be continued)

## American Registry of Pathology

Many diseases are so rare that any one individual or even the staff of a hospital or clinic has a limited opportunity to study certain conditions and lesions. Conclusions in science must be based on not one, but many, observations. Therefore, it is desirable to organize and support central agencies for the collection and filing of histories, specimens, and follow-up studies.

For over twenty-four years the American Registry of Pathology has been maintained at the Army Institute of Pathology in Washington. It was founded in 1922 by the then curator of the Army Medical Museum, Brig. Gen. George R. Callender, at the request of the American Academy of Ophthalmology and Otolaryngology. Succeeding curators, Major Paul E. McNabb, Colonel Virgil H. Cornell, Colonel Raymond O. Dart, and Colonel J. Earle Ash, have given time and thought to the problems of the Registry. On Jan. 1, 1946, material from over 43,000 cases was on file.

There are now 14 separate registries, each sponsored by a professional scientific society.\* Important additions to knowledge have been made by investigations at the Registry, notably on tumors and diseases of the eye, tumors of the lymphatic system, and tumors of the bladder.

With the reorganization of the Army Institute of Pathology and with plans for the erection of a new building sponsored by Major General Norman T. Kirk, The Surgeon General, the American Registry of Pathology takes on increased importance. There will be greater opportunities for the training of specialists, for research, and for educational activities.

The American Registry of Pathology deserves support from the civilian professions in terms of contributions of materials by individuals and sponsorship of registries by societies.

S/ROBERT S. MOORE.

"Virus diseases cannot be brought under control until scientists have found a way of understanding latent, or hidden, infections," says Dr. Karl F. Meyer, famed epidemiologist of the University of California in *Science News Letter*. For example, hog-cholera virus in sheep and cattle, and canine distemper virus in man.

\*The Registry of Veterinary Pathology, sponsored by the American Veterinary Medical Association, was established in 1944.



# SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

## Cesarean Section and Torsion of the Uterus in Cows

L. A. GENDREAU, B.V.Sc., D.V.M.

*Sherbrooke, Quebec*

THE BELIEF that cesarean section in cows rarely succeeds is held by many veterinarians. For that reason, it has been generally performed as a last resort, with a consequent high mortality. Experiences during recent years have so changed my opinion in regard to the indications that I do not hesitate to perform it in difficult parturitions.

Veterinarians in small animal practice have learned long ago that the risk in the dog is very small unless they wait too long and permit the animal to become exhausted from prolonged labor. It is well known that the operation is successful when performed at the right time. I have learned by experience that the same chance of success holds true for both the cow and the bitch. At present, I perform cesarean section in any case of malformation or difficult parturition in which there is danger of injuring the cow.

### CESAREAN SECTION

The operation must be performed before necrotic changes have taken place in the fetus or before severe lacerations of the genital tract have been caused by manipulation.

*Preparation of the Patient.*—The patient is always more quiet if left in her stall, providing it is a convenient place to work. The only restraint necessary is holding the animal's nose with thumb and first finger by the helper, and this may be required only while making the incision. The area in the right flank is prepared by clipping the hair closely. The skin is disinfected by cleaning it with alcohol or ether and then applying tincture of iodine or mercurochrome. The conditions under which we have to operate make strict asepsis impossible.

Presented before the Section on Surgery and Obstetrics, Eighty-third Annual Meeting, American Veterinary Medical Association, Boston, Mass., Aug. 18-22, 1946.

*Anesthesia.*—I have not yet been able to succeed with a cesarean operation in the cow after administering any general anesthetic. In every case, the animal remained in the recumbent position and died.

The operation is best performed under local anesthesia with the animal in the standing position. Caudal anesthesia is important in that it immobilizes the tail and thereby prevents the animal from infecting the field. Ten cc. of a 2 per cent solution of any standard local anesthetic is injected between the first and second caudal vertebrae. The tissue along the proposed line of incision is then infiltrated with the 2 per cent solution of the anesthetic, using approximately 30 to 50 cc.

*Technique.*—With a sharp scalpel, a vertical incision 15 to 20 in. long is made in the right flank, cutting the skin, the external oblique, the transverse, and the internal oblique muscles and, finally, the peritoneum. The latter is incised with scissors to the full extent of the wound. The omentum lies between the uterus and the abdominal wound. By reaching posteriorly with the right hand into the abdominal cavity, one will find its free posterior border which is brought forward easily to expose the uterus. The uterus is brought close to the abdominal wound, and an incision is made through its dorsal surface, low enough to bring it close to the outer part of the abdominal wound where the fluid content will drain outside. The incision should be long enough to allow free passage for the fetus.

Do not err by making your incision too near the os uterus because, after removing the fetus, the uterus will almost immediately contract. If made too close to the os, the wound will be drawn up into the pelvic cavity and cause some difficulty in suturing the uterus. It may not be easy to bring it close enough to the abdominal wound, and the fluid may escape into the abdominal cavity. Therefore, incise the uterus more toward the apex of the horn, leaving plenty of free uterus to pull out toward the external wound.

The operative area of the uterus is cleaned with physiologic saline solution and the incision with continuous Lembert sutures. No. 0 or No. 1 intestinal cat gut is used with the automatic needle, placing two rows of sutures, the second being a reinforcing row. The uterus is again cleaned with physiologic saline solution and returned to the abdominal cavity.

The yellow body is removed by pressure with the fingers to provoke the expulsion of the placenta and, for the same purpose, 20 mg. of stilbestrol is injected intramuscularly. Ten Gm. of crystalline sulfanilamide is placed in the abdominal cavity. At that stage of pregnancy, the yellow body does not have much to do in the retention of the afterbirth but, if not removed and if the afterbirth does not come away, I feel that I should have removed it. It only takes a minute once you are at the operation.

**Closing the Abdominal Incision.**—I close the abdominal incision with one row of interrupted sutures taking in the peritoneum, the muscles, and the skin. Care should be taken to include enough of the muscles to avoid leaving an empty space underneath the skin where secretions could accumulate and form abscesses which interfere with healing by first intention. Surgeons may object to this technique, but it saves a great deal of time and has given satisfactory results in my hands. Under the conditions one has to operate, infection is likely to occur in the abdominal wound, and if the peritoneum, the muscles, and the skin are sutured separately, pus is likely to collect between the layers and necessitate drainage.

**After Care.**—A piece of sterile muslin or towel should be placed over the wound and the animal blanketed according to the season of the year. The placenta is taken care of in the ordinary way, if not expelled naturally. The stitches are removed on the eighth to tenth day after the operation. No other special care is necessary unless complications develop, which will have to be treated accordingly.

#### UTERINE TORSION IN COWS

According to reports, torsion of the uterus may occur in all domestic animals. The condition is a twisting of the body of the uterus. There are many theories as to the cause. The torsion may occur while the animal is lying down or getting up, it may be due to the topographic relationship of the cow's uterus to the rumen, or it may be of nervous origin. The question arises also whether the uterus turns about its long or short axis.

**Technique.**—Apply caudal anesthesia with 10 cc. of a 2 per cent solution of any good local anesthetic. Prepare the operation area on the right flank in the usual way and infiltrate the tissues along the line proposed for laparotomy with 20 cc. of the anesthetic solution. Make an incision sufficiently long (6 to 8 in.) to permit the free introduction of the arm into the abdominal cavity. Wearing an obstetrical sleeve with glove and introducing the right arm into the abdominal cavity, reach to the posterior border of the omentum, bring it forward and, in case of a right torsion, direct the hand between the body of the uterus and the omentum toward the floor of the abdominal cavity. With the hand open toward the uterus, reach as far as possible and, while gradually pulling the arm out, let the uterus roll off,

exerting with the hand a pressure on the uterus, as if pushing it over to the left side. During all this time, the fingers are pointed toward the abdominal floor. Now gradually turn the hand so that the fingers are upward and push the uterus in the direction of the other side of the abdominal cavity. This manipulation will usually start the uterus to untwist, and then it will turn very easily. Handle it the opposite way if dealing with a left twist.

Just get your hand between the abdominal cavity and the uterus, as far down as you can reach. As you pull it up, put a little pressure on the uterus. When you get so far that you cannot come up any more, just keep the pressure there and twist your hand and push on the uterus. Push it over. Don't try to turn it; it will turn itself if you just exert the pressure. Once it starts to turn, it goes easily. You sometimes must watch it so as not to push it too far, because you may twist it the other way.

I have left the sutures in for three weeks. They did no harm. I have left them three weeks in cesarean section, also. In this operation for torsion of the uterus, where the incidence is not very large, I have removed them on the third day. I do not recommend it, however. I did it because I happened to be at the farm. You can leave them in almost as long as you would like; eight or ten days or two weeks. The incision is closed in the usual way. In most cases of torsion of the uterus, the calf is removed through the vagina, but occasionally a cesarean section is advisable.

#### DISCUSSION\*

DR. J. R. WILLIAMSON (Winston, Conn.).—I wonder if lumbar block has ever been used in either of these operations for anesthesia, rather than local.

DR. E. C. MOORE (Lewiston, Maine).—I have never used it, but I think some men do use it.

DR. EARL SUNDERVILLE (Ithaca, N. Y.).—I would like to ask Dr. Gendreau if he thinks the fetus is usually found medially or in the sac of the omentum, or is it between the omentum and the lateral peritoneal wall?

DR. GENDREAU.—I have never seen it between the omentum and the abdominal wall. I don't know whether it can occur or not.

DR. PAUL HANDLER (Willimantic, Conn.).—How do you keep the small intestine from rolling out of your incision in a cesarean? When you are sewing it up again, do you ever have difficulty with getting your muscles together? Do you find that it contracts, and it is quite difficult to draw it into position again?

CHAIRMAN DANKS.—The question is, first, what efforts are made to keep the small intestine from extruding during the operation and, second, is there any difficulty in bringing the abdominal muscles in apposition?

DR. GENDREAU.—Sometimes one does experience a little difficulty in holding the small intestine, but it is not very serious. One can hold it in with towels.

In pulling the abdominal muscles together, especially when the skin, the muscles, and the peritoneum are sutured together, one has to go through the skin and back, taking plenty of muscle. If one does not, there is a space between the muscle. The secretions accumulating are likely to cause an abscess.

DR. T. H. FERGUSON (Lake Geneva, Wis.).—I

\*After the presentation of the paper, the following discussion was conducted.

would like to ask if the Doctor pays any particular attention to the position of the fetus in the abdomen. Do you always operate on the right side? Do you always do the flank operation?

DR. GENDREAU.—No, I do not pay any attention to the position of the fetus, because one can always twist the uterus around if it is not in the position one would like to have it.

I like to take the hind legs first, because there are but the two legs to deal with. If one takes the front ones, there is the head as well as two legs to handle, and that requires two or three chains.

I always make the incision in the right flank, and operate on the standing animal. In years past, I have tried general anesthesia. I have tried chloral and chloroform. The objection was that the animals always remained down after the operation, and the next day had congestion of the lungs.

The last animal I operated on in that way, I turned every half-hour. I do not know whether the owner did or not, but the next morning the animal was lying on the same side as it was when I left it the night before, and it had congestion of the left lung. After three or four days, it was dead.

DR. ARTHUR B. CHRISTIAN (Asheville, N. Car.).—What type of suture material is used in sewing the peritoneum muscle and skin?

DR. GENDREAU.—I have used umbilical tape.

The technique for drawing blood from the anterior vena cava of the pig was described by Carle and Dewhirst in the JOURNAL for December, 1942.

Ulcerative endocarditis, proved to be due to *Brucella suis*, is reported in *American Heart Journal* (30, (1945): 77-87) by DeGowin and coworkers. This is believed to be the first recorded case of this nature.

Indolent human wounds are stimulated by an extract of adult sheep heart, which is protein in nature and has many characteristics of an enzyme.—*Ann. Surg., December, 1946.*

A flexible rubber bag for use in making blood transfusions has been designed by a Swiss inventor. When gravity flow is insufficient, pressure can be applied from the outside or by inflating a small balloon inside the bag. Bubbles and solid particles are filtered out.—*Sci. N. L., Nov. 2, 1946.*

Allergy prevented wound healing in a case described recently (*Sci. N. L., Oct. 26, 1946*). At least such is apparently the case, for the wound which had remained unhealed for two and a half years was completely healed within three weeks after the allergy was corrected.

## Twin Calves Produced at Will

A procedure which insures the conception and birth of twin calves is reported by Cambridge University Animal Research Station. Dr. John Hammond developed the method, which consists of injecting cows with a serum of Welsh mares' blood. The *Hereford Journal* quotes the report as saying, "The only difficulty to be overcome in the use of Hammond's new process is to prevent the cows dropping triplet calves, or even more. Research is being conducted to find a method for controlling and limiting the birth to two."

A calf usually weighs 6 per cent of its mature weight at birth.

Research is more a process of evolution than revolution.—*C. F. Kettering.*



—Acme Photo.

This unnamed 10-day-old filly is believed to be the largest ever foaled, weighing 138 lb. 9 oz., 4 ft. high, with a girth of 37½ inches. She is by Equestrian, out of Bertha Bigfoot. The young lady is secretary to Mr. W. Stremmel, owner of Glen Cove Stud Farm, Vallejo, and owner of the colt.



# Endocrine Therapy in Veterinary Medicine

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ALTHOUGH it is unlikely that endocrine therapy will be of as much importance in veterinary medicine as in human medicine, its use is constantly increasing. In human medicine, the treatment of such acute disturbances as diabetes with insulin, and Addison's disease with adrenal cortical hormones is essential for the maintenance of life; and hormones are widely used in the the correction of hypothyroidism and numerous types of reproductive disorders. Endocrine therapy in veterinary medicine is at present limited to the correction of certain genito-urinary disturbances and for the alteration of such economically important functions as milk and egg production, and growth and fattening. There is far from complete agreement as to the indications for, and the detailed procedures which should be used in, endocrine therapy. Only by the extension of investigations in experimental and clinical medicine will many of the current problems be solved, and it might be well to regard most hormone treatment as experimental in nature.

## GONADOTROPIC HORMONES

The gonadotropins, or gonadotropic hormones, are primarily concerned with ovarian and testicular function and, although produced chiefly by the anterior pituitary gland, are secreted in large amounts by the chorion in pregnant women and mares. The anterior pituitary gland apparently secretes two types of gonadotropin, a follicle-stimulating factor which is responsible for follicular growth in the female and spermatogenesis in the male, and a luteinizing factor which is concerned with ovulation and corpus luteum function in the female and testicular interstitial cell function in the male. The clinical use of gonadotropins of pituitary or extra-pituitary origin for the correction of infertility in domestic animals has thus far been disappointing. In females, the gonadotropins sometimes result in ovulation without estrus or *vice versa*, multiple ovulation, excessive follicular growth without ovulation, abnormal luteinization, or no stimulation at all. Few favorable results

attributable to specific gonadotropin therapy have been observed in males.

Asdell *et al.*<sup>1</sup> found that in a group of cows with fairly regular estrous cycles, but which had failed to conceive after repeated service, anterior pituitary extracts were more effective than estradiol benzoate but that there was a higher percentage of pregnancies in untreated cows than in those which received hormones.

Bhattacharya *et al.*<sup>2</sup> reported that the subcutaneous injection of 1,500 international units of gonadotropin from pregnant mare serum will induce estrus and ovulation. Cameron<sup>3</sup> found that 21 of 46 anestrus cows came in heat following the injection of 1,000 I.U. of pregnant mare serum; others have made similar reports. The use of gonadotropins from human pregnancy urine has been reported to be beneficial in the induction of estrus in anestrus cattle (Hupka and Majert<sup>4</sup>) and in the correction of lowered fertility in cows with regular estrous cycles. Bottomley *et al.*<sup>5</sup> gave three intramuscular injections of 1,000 rat units each at two-day intervals beginning on the day of breeding and found that 56.7 per cent of the treated cows became pregnant in contrast with 6.9 per cent of the untreated females. However, it is the opinion of most investigators that neither chorionic gonadotropins of human or equine origin nor anterior pituitary extracts are of sufficient value to warrant their routine use in anestrus cattle or those with fairly regular cycles but which fail to conceive after repeated service.

Recent investigations on the correction of cystic ovaries in cattle with gonadotropins suggest that this type of treatment may be of definite value. Casida *et al.*<sup>6</sup> treated 96 cows having cystic ovaries with gonadotropic material prepared from an unfractionated extract of sheep pituitary gland. The gonadotropin dosage varied from 0.67 to 2.5 Gm.-equivalents, but in most cases 1 Gm.-equivalent was dissolved in 5 cc. of distilled water and injected intravenously. Eighty-one of the cows exhibited nymphomania at the time of injection, but in 72 of them the symptoms disappeared following a single treatment. Corpora lutea formed in 74 of the 96 animals within thirty-one days. Normal estrus occurred in 69 of the cows following a single treatment. Eighty-four cows showed no recognizable uterine or tubal pathology; 53 of these were bred and 36 became pregnant. Moore<sup>7</sup> treated 18 cows having cystic ovaries and nymphomania with 1,000 I.U. (international units) of pregnant mare gonadotropin in water solution and injected intravenously. In 12 cases, nymphomania ceased in from three to eleven days. Corpora lutea were formed in 10 cows. Two of the 12 relapsed into nymphomania; these and the 6 which did not respond to the first treatment were retreated and normal estrual cycles were

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resumed in 7 of these. Of the 17 cows treated once or twice, 12 were known to have conceived following treatment.

Because of the economic advantages which might ensue if estrus, ovulation, and pregnancy could be produced at will in seasonal breeding species such as sheep and goats, numerous investigators have attempted to regulate the reproductive cycle of anestrus ewes and does. Cole and Miller<sup>8</sup> pioneered in this work and found that the administration of doses of approximately 100 r. u. (rat units) of pregnant mare serum, given at intervals of seventeen days, would induce both estrus and ovulation in ewes. Single injections were as effective as three injections on consecutive days. Phillips *et al.*<sup>9</sup> have written an excellent review containing over 70 references on this problem, and the present status of the work can be summarized as follows: Follicular growth and ovulation have been induced in a high percentage of animals treated with various gonadotropins, but the induction of estrus in conjunction with ovulation has been extremely variable. Although some workers have reported a satisfactory percentage of pregnancies, fertility, in general, has been lower than in nontreated animals during the breeding season.

Murphree *et al.*<sup>10</sup> have studied the potential fertility of ova from gonadotropin-treated ewes and found that many of the ova were not fertilized when exposed to potentially fertile sperm. Twenty-four ewes treated with follicle-stimulating extracts twelve days after the beginning of estrus produced 576 corpora lutea and 357 eggs. In 7 of the ewes, no eggs were fertilized and, in 17 others, 2 to 19 ova were fertilized, for a total of 153. In 5 females similarly treated three days after the beginning of estrus, 57 corpora and 25 eggs were produced, but none of the ova were fertilized. The use of follicle-stimulating material in 9 anestrus ewes produced 84 corpora and 25 unfertilized eggs; and 4 anestrus ewes given pregnant mare serum alone or in combination with unfractionated pituitary extract had eight corpora lutea and eight eggs, one of which was fertilized. It appears, therefore, that although gonadotropins may produce both estrus and ovulation under certain conditions, the ova are not necessarily fertile. Casida *et al.*<sup>11</sup> produced superovulation in 25 ewes by the subcutaneous injection of 30 to 48 Gm.-equivalents of a sheep pituitary, follicle-stimulating extract for four successive days, followed by the intravenous injection of a 10-Gm.-equivalent luteinizing extract on the sixth day. This treatment resulted in the production of approximately 20 corpora lutea per ewe and, in the group of ewes examined within five days after insemination, there was an average of 9.2 normal embryos and 4.0 unfertilized eggs or abnormal embryos. In the group of females examined after the thirtieth day of pregnancy, there was an average of 24.6 corpora lutea, 0.8 normal embryos, and 3.8 unfertilized eggs or abnormal embryos. It was suggested that the high embryonic mortality was caused by unfavorable uterine environment due either to a direct or an indirect effect of treatment, or to abnormalities induced in the ova by the

rapid maturation of follicles. Studies with cattle by Casida *et al.*<sup>12</sup> were similar to their results with sheep.

Cole and Hughes<sup>13</sup> report that it appears possible to shorten the time between successive farrowings in sows by two to four weeks by the use of pregnant mare serum. Sows injected with approximately 1,000 I.U. of equine gonadotropin in early lactation did not respond regularly, but 26 of 27 females injected between the thirty-ninth and sixty-eighth days of lactation came in heat three to seven days after treatment. Twenty of 23 sows which were bred became pregnant.

#### ESTROGENIC HORMONES

Estrogens of natural and synthetic origin are widely used in veterinary practice. There is nearly complete agreement that estrogens will produce estrus when administered in adequate dosages. Although there is some variation in the quantities of stilbestrol reported necessary for the induction of heat in anestrus females, the schedule proposed by Detweiler<sup>14</sup> is in fairly general use; heifers, 10 mg. (intramuscularly); cows and mares, 20 mg.; sows, 5 mg.; ewes, 3 mg.; bitches, 1 mg. Of the natural estrogens, a single injection of 10 mg. of estradiol dipropionate is adequate for the induction of heat in cattle. Experimental and clinical evidence clearly indicates that estrus can be induced by stilbestrol and other estrogens, but experimental and clinical findings are somewhat divergent concerning the value of estrogens in the establishment of normal estrual cycles, ovulation, and pregnancy. In the male, estrogens cause testicular degeneration and atrophy, and when administered in large quantities in the female result in ovarian regression and quiescence. These effects appear to result from decreased anterior pituitary gonadotropin secretion. However, numerous clinicians report results similar to those of Folley and Malpress,<sup>15</sup> Montgomerie and Brownlee,<sup>16</sup> Anderson,<sup>17</sup> and others in which single estrogen injections in anestrus cattle are followed by the establishment of normal estrual cycles and eventual pregnancy. Reece<sup>18</sup> summarized the results of treating 189 cows with ovarian inactivity with estrogens and reported that 85 per cent came in heat. Eighty-one were bred and examined for pregnancy and, of these, 60 conceived. It should be pointed out that ovarian inactivity sometimes follows estrogen treatment, and the absence of estrus should not be construed as evidence of pregnancy.

The use of estrogens, particularly stilbestrol, in the expulsion of the retained placenta and in the treatment of pyometra has been widely practiced. Moore<sup>19</sup> recently summarized the published literature and presented the results of the treatment of 43 cases of retained placenta in cattle. Stilbestrol solutions in oil were administered intramuscularly in single doses varying from 30 to 80 mg. In some cases, a single dose was given and, in others, it was repeated one to three times. Moore concluded that 4 of the animals were benefited, 25 received no benefit, and 5 suffered injury. Bulard<sup>20</sup> has observed similar results in the Purdue University cattle herds.

Stilbestrol and other estrogens are being

widely used in the treatment of pyometra in cattle. The recently published findings of Moore<sup>21</sup> are representative of the results which are being obtained in veterinary practice. Moore treated 43 cows suffering from pyometra following the manual removal of retained placentas. With three exceptions, a single injection of 30 to 50 mg. of stilbestrol was given about two weeks after manual removal of the placenta. Forty of the cows came in heat within seventy-two hours following treatment, and pus began to be discharged from the uterus soon after the initiation of estrus. All uteri were empty and involution was proceeding rapidly within two to seven days after the beginning of heat. In the estrogen-treated cows, fertility was retained in 97.8 per cent in comparison with 86 per cent in a control group of 50 cows. In the average treated cow, conception occurred on the eighty-sixth day following parturition in contrast with 145 days in the control animals. It appears that stilbestrol is of value not only in the treatment of pyometra following manual removal of the placenta but in the maintenance of fertility in these cows.

Expulsion of the mummified fetus following the injection of 25 mg. of stilbestrol (Detweiler<sup>14</sup>) or 50,000 units of a natural estrogen followed by 3 cc. of pitocin (Guard<sup>22</sup>) have been reported.

It has long been known that estrogens are capable of inducing lactation in laboratory animals (Reece and Turner<sup>23</sup>), and numerous workers have demonstrated that copious lactation occurs in some estrogen-treated cattle. Reece<sup>18</sup> and Parkes<sup>24</sup> have reviewed the results of American and British investigators. Although there is considerable variation in response and in method and duration of treatment, the following examples are reasonably typical of what may be expected. Reece<sup>18</sup> obtained an unusually large response following the administration of 273 mg. of stilbestrol dipropionate to a 33-month-old, barren Jersey heifer over a fourteen-week period. During 305 days of lactation, this animal produced 8,046 lb. of milk and 383 lb. of butterfat. Parkes<sup>24</sup> reported the results of treatment of 30 virgin heifers and barren cows in which 2 to 5 Gm. of stilbestrol or hexestrol were implanted in tablet form. The results were variable, but daily yields of milk of 16 lb. were common within two months after implantation, and 1 animal produced nearly 6,000 lb. of milk in one year. In a second series of 60 heifers and cows, varying amounts of stilbestrol and hexestrol were implanted to give total doses of from 0.4 Gm. to 5 Gm. over a period of 30 to 200 days. The udders of heifers showed evidence of stimulation within two weeks and maximum milk yield was established in about forty days. The total milk production was reported to be comparable to that of the first lactation. Persistent corpora lutea apparently inhibited milk secretion. Removal of the tablets was sometimes followed by increased production and, in those animals which failed to come into full lactation, the injection of 200 mg. of stilbestrol in oil solution apparently stimulated production. Spriggs<sup>25</sup> treated 13 heifers and 6 dry cows with 50, 50-mg. tablets of stilbestrol or hexestrol implanted sub-

cutaneously behind the shoulder. The unabsorbed portions of the pellets were removed after sixty days. Lactation began in three to five weeks and was maximum in eight to ten weeks. Four of the treated animals did not lactate and 3 produced practically no milk. Ten of the heifers produced from 3,000 to 7,000 lb. of milk annually. Spriggs concluded that the procedure is not economically sound in permanently sterile heifers nor in dry cows with impaired fertility.

Numerous undesirable effects have been reported in estrogen-treated cattle. Nymphomania, cystic ovaries, ovarian hypoplasia, abortion, and spontaneous pelvic fractures may sometimes occur. Although there is clinical evidence that some anestrous cattle, and those exhibiting certain other genital disturbances, may become pregnant following estrogen treatment, there is also sufficient clinical evidence to warrant the recommendation that lactation should not be induced in heifers if it is intended to retain these animals in the breeding herd.

Among the miscellaneous clinical uses of estrogen is the treatment of urinary incontinence in spayed bitches. Stilbestrol can be administered orally at the rate of 1 mg. daily for three days, followed by 1 mg. every third day (Detweiler<sup>14</sup>). The treatment of tumors of the genitalia with various hormones has received some attention in both human and veterinary medicine. This approach is definitely in the experimental stage, especially in view of the carcinogenic properties which certain estrogens are known to possess. However, reports by Beckman<sup>26</sup> and others of the treatment of mammary tumors in bitches with testicular extract, and of neoplasms of the prostate and seminal vesicles of dogs with female hormones, are of academic interest.

The use of natural and synthetic estrogens in fattening broilers, in the production of capons, and for tenderizing and fattening old male chickens has been widely reported—Lorenz,<sup>27</sup> Jaap *et al.*<sup>28</sup> and others. The subcutaneous implantation of stilbestrol pellets weighing from 10 to 16 mg. has been shown to improve market quality in broilers. Capons or pseudocapons can be produced by the implantation of pellets of similar weight, but retreatment is usually necessary after two or three months. The necessity for retreatment can be determined by observing comb and wattle coloring and development. Stilbestrol, although orally active, is required in much larger dosages for effective treatment of either broilers or cockerels. Thayer *et al.*<sup>29</sup> found the dimethyl ether of stilbestrol to be the most potent of a number of orally active estrogens and suitable for use in fattening rations. These workers recommend the addition of 110 mg. of the dimethyl ether of stilbestrol to 1 kg. of the ration for two weeks for optimum fattening results. It should be pointed out that preliminary studies show that small quantities of estrogen are retained in the tissues of treated chickens. Before estrogens are approved by the Pure Food and Drug Administration for commercial poultry production, the exact amounts and the physiologic effects of any retained estrogens must be known.

## ANDROGENIC HORMONES

The male sex hormones are not at present widely used in veterinary practice. There is no doubt but that the androgens will correct impotence due to lowered male hormone secretion by the testis, but unfortunately impotence is frequently accompanied by lowered fertility or sterility due to decreased spermatogenesis. Although the androgenic hormones have been shown to affect spermatogenesis favorably in a few species, by and large they do not stimulate sperm production and may interfere with it. The use of androgens in the treatment of mammary tumors and in the treatment of prostate enlargement are still in the experimental stage.

## EXPERIMENTAL ALTERATION OF THYROID FUNCTION

Andrews and Bullard<sup>21</sup> found that partial thyroidectomy of beef steers was followed by markedly increased rates of gain for eight or ten weeks but that, after this interval, hypertrophy of the thyroid remnants occurred and rate of gain returned to normal. Kempster and Turner<sup>22</sup> and Andrews and Schnetzler<sup>23</sup> have recently reported that the addition of thiouracil, a thyroid-depressing drug, to the ration results in increased fat deposition and improved market quality in broilers. Andrews and Schnetzler<sup>23</sup> fed a standard broiler ration containing 0.2 per cent thiouracil to broilers between 6 and 14 weeks of age. As a result of this treatment, 78 per cent of the treated chickens received the top market grade in comparison with 50 per cent of the controls, and fat deposition was increased about 9 per cent. When Andrews and Beeson<sup>24</sup> fed fattening lambs a ration containing 0.175 or 0.333 Gm. of thiouracil per lamb per day, fat deposition and market quality were improved. Thirty-five per cent of the carcasses of the control lambs received the top market grade in contrast with 57 per cent of the lambs in the two thiouracil lots. Experiments with beef steers by Beeson and Andrews<sup>25</sup> and with swine by Muhrer and Hogan<sup>26</sup> indicate that while thiouracil may affect fat deposition, the results are not as promising as with chickens and lambs.

The production of experimental hyperthyroidism with thyroxine, with desiccated thyroid gland, or with artificial thyroprotein has been shown to increase milk production, to influence egg production, and to increase fertility in certain domestic animals. Graham<sup>27</sup> showed that the injection of thyroxine during the declining phases of lactation increased both milk and butterfat production. Reineke and Turner<sup>28</sup> recently developed a technique of producing highly active thyroproteins, and they and others have reported studies on the effect of this material on such important economic factors as milk and egg production, and reproduction. Reineke and Turner<sup>28</sup> and Reineke<sup>29</sup> found that, when thyroprotein was fed at the rate of 1.5 to 2.5 Gm. per 100 lb. of live weight, the milk production of 27 cows was increased 18.6 per cent. The cows were fed thyroprotein continuously for a varying period up to three months, and all were in the declining stage

of lactation when treatment was started. Reece<sup>30</sup> fed 10 Gm. of thyroprotein daily to 5 cows in the declining stage of lactation for three weeks. There was little increase in average milk production, but the butterfat content of the milk increased from 3.62 per cent to 4.11 per cent. Losses in body weight were slight and heart rate was only moderately increased. Turner *et al.*<sup>31</sup> fed 24, 2-year-old White Leghorn hens a ration containing 10 Gm. of thyroprotein per 100 lb. of feed. The egg production of the controls and experimental groups was similar during the fall and winter months, but after May 7 egg production in the thyroprotein-fed hens exceeded that of the controls. Egg production in the controls declined 43.8 per cent in the second half of the calendar year in contrast with a 6.4 per cent decline in the experimental birds. These results await large scale confirmation, but it has been suggested that the seasonal decline in egg production during the summer may be due in part to decreased thyroid activity and that the administration of thyroprotein results in the maintenance of more uniform thyroid hormone levels.

Although the thyroid gland is not directly concerned with reproduction, it is frequently reported that in the human being the correction of hypothyroidism is more apt to result in the restoration of normal fertility than any other general type of therapy. Numerous reports on the effects of thyroprotein in the correction of lowered fertility in males have come to our attention. Reineke<sup>32</sup> reported that the treatment of 14 bulls with unsatisfactory breeding records resulted in improvement in vigor and libido in 10, and in improved conception rate in 4. The bulls were fed 0.5 to 1.0 Gm. of thyroprotein per 100 lb. of body weight. Some effects were usually noticed in two weeks and a range of seven to forty days was observed. The writer has received personal reports from clinicians on the frequent improvement in vigor of bulls and boars following thyroprotein feeding and occasional reports on the improvement of fertility. Although it is obvious that lowered fertility or sterility cannot be treated by any one regime, it does seem theoretically possible that hypothyroidism may be a limiting factor in reproduction in some instances. Much experimental work must precede the use of thyroprotein in the routine treatment of impotence and sterility in sires.

Bogart and Mayer<sup>33</sup> have recently shown that the "summer sterility" which typically occurs in rams in the Midwest may sometimes be overcome by hormone therapy. These workers report that "thyroxine or thyroid-active protein, administered orally or by injection, alleviates those symptoms of 'summer sterility' resulting from impaired spermatogenic activity, but neither substance has any effect upon those symptoms of 'summer sterility' correlated with a decline in the activity of the interstitial tissues." It thus appears that seasonal environmental changes, which are accompanied by changes in thyroid function, may affect reproduction not only in the ram but in other species as well.



## CONCLUSIONS

The effectiveness of epinephrine as a vasoconstrictor and of pituitrin as a smooth muscle stimulant, and the use of these hormones in veterinary medicine, are well known and have not been reviewed in this paper. Although the use of the gonadotropic hormones is at present disappointing in the practical correction of sterility, the value of certain gonadotropins in the treatment of nymphomania and cystic ovaries is encouraging. The value of estrogens in pyometra and in the induction of estrus seems fairly well demonstrated; their use in the correction of infertility and their place in the economy of milk secretion and the fattening of chickens is at present uncertain. The effects of thyroprotein in the stimulation of milk and egg production and in reproduction are of definite interest and warrant further research. It appears that the production of hypothyroidism with thiouracil and other thyroid-depressing substances may offer a new approach to the study of growth and fattening.

As previously pointed out, hormone therapy in veterinary medicine is still in the experimental stage and only by the extension of investigations in experimental and clinical medicine will the solutions to many of the current problems be found.

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## Hormone Treatment of Agalactia

Application of stilbene ointment (1%) to the udders of mares, sows, sheep, and cows favorably influenced udder development and lactation without showing any unfavorable effects, according to experiments by Belgian veterinarians (*Vet. Rec.*, Dec. 28, 1946). It was not effective after parturition when used on dams that had no milk for their young.

## Farm Animal Obstetrics

While few human beings are born without professional aid, animals are not that fortunate—few have that advantage, although, says Dr. E. T. Baker in the *American Hereford Journal*, "a little help at the right time would save many a valuable animal. Anything can happen." Obstetrical work in farm animals is service *in extremis*, or at best, a last resort. The fetal mortality runs close to 100 per cent and, on the maternal side, untoward sequels of one sort or another dog the best obstetrician. As the learned Idaho doctor stresses, the trick is to know when to call for professional help.

**Shock from Infection.**—In addition to shock from injury, hemorrhage, and burns, the same syndrome is encountered also in the form of secondary shock or "cold shock" during the course of acute infections. — *From Seminar, 9, (Feb., 1947): 22. Abstr. from New England J. Med.*

Schroeder says: No method for the reduction and fixation of fractures yet devised is efficient unless the individual applying it is efficient.

The cerebral cortex of the newborn cat is relatively mature.

Livestock on Farms in the United States on Jan. 1, 1947, with Comparisons Since 1930

(Thousand head)

Year	Horses	Mules	All Cattle	Milk Cows*	Stock Sheep	Hogs	Chickens	Turkeys
1930	13,742	5,382	61,003	23,032	45,577	55,705	468,491	5,969
1931	13,195	5,273	63,030	23,820	47,720	54,835	449,743	5,318
1932	12,644	5,148	65,801	24,896	47,682	59,301	436,815	5,946
1933	12,291	5,046	70,280	25,936	47,303	62,127	444,523	6,852
1934	12,052	4,945	74,369	26,931	48,244	58,621	433,937	6,309
1935	11,861	4,822	68,846	26,082	46,139	39,066	389,958	5,499
1936	11,598	4,628	67,847	25,196	45,435	42,975	403,446	5,731
1937	11,342	4,460	66,098	24,649	45,251	43,083	423,921	6,358
1938	10,995	4,250	65,249	24,466	44,972	44,525	389,624	6,096
1939	10,629	4,163	66,029	24,600	45,463	50,012	418,591	6,489
1940	10,444	4,034	68,309	24,940	46,266	61,165	438,288	8,569
1941	10,193	3,911	71,755	25,453	47,441	54,353	422,841	7,193
1942	9,873	3,782	76,025	26,313	49,346	60,607	476,935	7,485
1943	9,605	3,626	81,204	27,138	48,196	73,881	542,047	6,600
1944	9,192	3,421	85,334	27,704	44,270	83,741	582,197	7,429
1945	8,715	3,235	85,573	27,770	39,609	59,331	516,497	7,203
1946	8,053	3,010	82,434	26,695	35,599	61,301	530,203	8,493
1947	7,251	2,773	81,050	26,100	32,542	56,901	475,442	6,632

\*Included in all cattle.

# CLINICAL DATA

## Clinical Use of Sulfamerazine in the Treatment of Hemorrhagic Septicemia and Pneumonia in Cattle

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SULFAMERAZINE, a derivative of sulfapyrimidine, has been employed with favorable results in the treatment of pneumonia in man. This fact, considered with the pharmacologic characteristics of the compound, suggests that sulfamerazine may be of equal value for similar conditions in cattle.

### EXPERIMENTAL METHODS

It has been shown experimentally and clinically<sup>1-3</sup> that sulfamerazine is absorbed more rapidly and excreted more slowly than the other sulfonamides. This compound, given to monkeys in doses of 0.6 Gm./kg. of body weight, produced higher average concentrations in the

ministered orally in therapeutic doses produced no toxic effects in mice and rats.<sup>1</sup> Excessive dosage was required to produce renal damage in dogs and monkeys.<sup>1,2</sup>

The more rapid and more complete absorption of sulfamerazine, together with its slow excretion, makes it possible to obtain and maintain a given concentration in the blood with relatively small doses and infrequent administration. A sulfonamide with these advantages should be welcomed for practical and economic reasons.

Thorp<sup>4</sup> employed sulfamerazine in the treatment of pneumonia in 16 calves and obtained good or fair results in 87 per cent of the cases. No toxic manifestations were observed with a total daily dosage of 1.0 gr./lb. of body weight.

TABLE I—Treatment of Hemorrhagic Septicemia and Pneumonia of Cattle with Sulfamerazine

No.	Breed*	Sex	Age	Body wt. in lb.	Temp. when treatment was begun (F.)	Re- marks†	Daily dose gr./lb. body wt.	No. daily doses	No. days treated	Results Rec. Died
8	H	F	2 yr.	800 to 1,000	104.3 to 106.3	1	1.0 0.5	4 2	2 3	8
7	G	F	2 yr.	800 to 900	104.3 to 106.3	2	1.0 0.5	4 2	2 4	5 2
7	H	F	2 to 3 yr.	800 to 1,000	103.2 to 106.4	3	1.0 0.5	4 2	2 3	7
Total	22									20 2

\*H=Holstein-Friesian. G=Guernsey.

†The serum used was hemorrhagic septicemia antiserum (bovine).

<sup>1</sup>Administered 100 to 250 cc. serum on first day of treatment. <sup>2</sup>100 cc. serum administered. <sup>3</sup>2 animals died—1 in 2 wk. and 1 in 2 mo. Autopsy revealed traumatic gastritis; 2 of surviving animals aborted on 9th and 12th day, respectively. <sup>4</sup>Administered 100 cc. serum.

blood eight hours following administration than did sulfadiazine in doses as high as 1.8 Gm./kg. daily.<sup>1</sup> Blood-level determinations in several calves treated for pneumonia with sulfamerazine showed concentrations of from 6 to 8 mg. of drug per 100 cc. on a daily dosage of 1.0 gr./lb. (0.034 Gm./kg.) of body weight.<sup>2</sup>

Since the excretion of sulfamerazine is relatively slow, there is less danger of crystal deposition in the kidneys than is the case with most other related drugs.<sup>4</sup> Experimental studies have revealed that sulfamerazine ad-

During the last two years, we have used sulfamerazine in the treatment of hemorrhagic septicemia, pneumonia, and local infections in cattle. Work in the field was conducted with limited laboratory facilities; thus, all diagnoses were established by physical examination. No blood studies were made.

Sulfamerazine was employed in the treatment of 122 cases of hemorrhagic septicemia in cattle. From 2 to 9 animals in each of 18 different herds showed clinical evidence of the disease when the treatment was started. The ages of the cattle ranged from 6 months upward. A great majority of them showed definite clinical evidence of pneumonia. The 122 cases

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fall into two categories according to the dosage employed.

Group 1 comprised the 22 cases recorded in table 1. Treatment was begun with a total daily dose of 1 gr. of sulfamerazine per pound of body weight administered in divided doses every six hours for two days. Thereafter, this dosage was reduced one-half and administered in two doses, twelve hours apart, for three or four days. The 22 animals also received from 100 to 250 cc. of hemorrhagic septicemia antiserum. A prophylactic dose of 50 cc. of serum was administered to exposed animals without symptoms.

In all but 5 of the 22 affected animals, the temperature dropped to normal in from three to four days. In the 5 exceptions, an elevated temperature continued for a week. Two of these animals later succumbed to traumatic gastritis, 1 within two weeks after the onset of the symptoms; the other recovered tempo-

rarily only to succumb in two months. Two animals aborted, 1 on the ninth and 1 on the twelfth day. In hemorrhagic septicemia, an elevated temperature lasting for several days is a hazard to the fetus, and many pregnant animals subsequently will abort. For this reason, it is always imperative to employ adequate and prompt measures to reduce the temperature.

Group 2 comprised the 100 cases recorded in table 2. In view of the results obtained in group 1, the dosage in the second group was increased to 1.5 gr./lb. of body weight during the first twenty-four hours of treatment. This quantity was administered in divided doses at six- or eight-hour intervals. Since reabsorption of sulfamerazine through the renal tubules results in the maintenance of high blood levels, the total daily dosage was reduced to 0.5 gr./lb. of body weight, administered in divided doses

TABLE 2—Treatment of Hemorrhagic Septicemia and Pneumonia of Cattle with Sulfamerazine

No.	Breed* & Sex	Age	Body wt. in lb.	Temp. when treatment was begun (F.)	Re-marks†	Daily dose gr./lb. body wt.	No. daily doses	No. days treated	Results Rec. Died
1	G—F	3 yr.	900	106.3	1	1.5 0.5	4 2	1 1	1
3	G—F	1 to 2½ yr.	500 to 900	103.8 to 106.2	2	1.5 0.5	3 2	1 2	2 1
3	G—F	6 mo.	250	104.8 to 105.8	3	1.5 0.5	4 2	1 2	3
7	H&G—F	2 to 6 yr.	800 to 1,000	103.6 to 106.2	4	1.5 0.5	3 2	1 2	7
6	H&G—F	5 yr.	900 to 1,300	103.6 to 106.8	5	1.5 0.5	3 2	1 1	6
5	H—F	5 to 6 yr.	1,050 to 1,300	104.1 to 107.2	5	1.5 0.5	3 1	1 1	5
7	H&G—F	8 yr.	1,000 to 1,200	103.8 to 106.1	6	1.5 0.5	3 2	1 1	7
2	G—F	3 yr.	900 to 950	105.8 to 106.2	6	1.5 0.5	4 2	1 2	2
2	H—F	6 yr.	1,200	105.8 to 107.0	7	1.5 0.5	4 2	1 2	2
3	G—F	1½ yr.	700 to 750	104.8 to 106.0	8	1.5 0.5	4 2	1 2	3
52	H,G,&J—F	6 mo. to 10 yr.	300 to 1,200	103.6 to 107.2	9	1.5 0.5	3 2	1 1	49 3
9	H—F	6 mo. to 3 yr.	100 to 1,150	103.6 to 106.3	10	1.5	3	2	9
Total 100									96 4

\*H=Holstein-Friesian. G=Guernsey. J=Jersey. F=Female.

†The serum used was hemorrhagic septicemia antiserum (bovine).

<sup>1</sup>Received 50 cc. serum prophylactically previous to illness. <sup>2</sup>No serum. Animal that died also received 12 doses 100,000 units ea. of penicillin at 3-hr. intervals. <sup>3</sup>100 cc. serum. <sup>4</sup>No serum. 1 cow had not eaten for 4 days. In addition to pneumonia and hemorrhagic septicemia, metritis and retained placenta complicated the clinical picture. 30 Gm. of sulfamerazine powder were placed in the uterine cavity. Improvement in 3 days was dramatic, with a normal temperature and the animal eating. Several months later, this cow was producing a satisfactory amount of milk. <sup>5</sup>Received no serum. 1 received 100 cc. serum.

<sup>6</sup>Prophylactic dose of 50 cc. serum given to all animals in herd. <sup>7</sup>No serum. Animals in poorly ventilated stable. Sick several days before treatment. <sup>8</sup>150 cc. serum to each animal. <sup>9</sup>No serum. These animals were in 4 different herds. <sup>10</sup>No serum.

twice a day for one or two days. This completed the treatment. For example, in the case of a cow weighing 1,000 lb., 1,500 gr. were administered on the first day in divided doses at six- or eight-hour intervals, and 500 gr. on the following day in two equal doses, morning and night.

In 80 of the 100 animals, the temperature returned to normal in twenty-four hours; in 12, it was normal on the second day; and in the remaining 4, on the third day. Four animals, showing symptoms of an advanced stage of pneumonia, died two to four days after treatment was begun.

The 122 cases were classified also according to a second method of treatment as outlined under remarks in tables 1 and 2: Forty-two were treated with hemorrhagic septicemia antiserum and sulfamerazine, while 80 were treated with sulfamerazine alone. The administration of serum apparently had no appreciable influence on the rate of recovery, since the results among those that received serum plus sulfamerazine, and those that received sulfamerazine only, were quite identical. A mortality of 5 per cent occurred in each group.

It is important to add that, in the presence of hemorrhagic septicemia complicated with pneumonia, a delay of several days before treatment with sulfamerazine was begun may have retarded recovery and prolonged convalescence.

Sulfamerazine was employed also in the treatment of clinical cases of pneumonia in 27 young calves; the results obtained are tabulated in table 3. This condition is seen frequently in our practice, particularly on farms where calves are raised as replacements in dairy herds. Very often, young stock are housed during the winter in damp, unclean quarters with inadequate ventilation. Undoubtedly, these conditions predispose to a high incidence of pneumonia in young calves. In addition to prompt and adequate medication, the manage-

ment of calf pneumonia involves the use of satisfactory housing and proper nutrition.

Our experience with sulfamerazine in the treatment of calf pneumonia began early in 1944. At that time, the drug was administered at the rate of 0.5 or 1 gr./lb. of body weight per day, divided into four equal doses. This regimen was continued for two days; thereafter, 0.5 gr./lb. was administered in two divided doses per day. Usually, the latter dosage was continued for two additional days. The response to this treatment was better than with other forms of treatment, but was not entirely satisfactory.

Since a more rapid reduction of fever in mature animals suffering with hemorrhagic septicemia was observed following administration of 1.5 gr./lb. of body weight in three (or four) divided doses on the initial day of treatment, and 0.5 gr./lb. in two equal doses per day thereafter, it was deemed advisable to use the same dose schedule for immature cattle and calves. As anticipated, the response to this change in dosage was satisfactory. Body temperatures were reduced rapidly and recovery was as prompt as among the mature animals. Many calves began to eat well within twenty-four hours. The recovery rate among the cases reported in this series was 93 per cent.

In the presence of acute calf pneumonia and hemorrhagic septicemia complicated with pneumonia, many animals were "down" when first seen and unable to ingest or, possibly, utilize an oral medicament. For these patients, sodium sulfamerazine intravenously proved to be of great value. The initial dosage of sodium sulfamerazine was 0.33 gr./lb. of body weight administered in 8 to 10 per cent solution in sterile distilled water; thereafter, 0.5 gr. of sulfamerazine per pound of body weight was administered orally. The oral treatment usually was continued for one day only. The temperature in most cases became normal

TABLE 3—Treatment of Pneumonia in Calves with Sulfamerazine

No.	Breed*	Sex	Age	Body wt. in lb.	Temp. when treatment was begun (F.)	Re- marks†	Daily dose gr./lb. body wt.	No. daily doses	No. days treated	Results Rec. Died
3	H	M	1 to 12 da.	70 to 90	104.3 to 105.2	1	0.5 0.5	4 2	2	2 1
5	H	M and F	1 to 3 wk.	85 to 130	104.4 to 106.2	2	1.0 0.5	4 2	2 2	4 1
6	H	F	1 to 3 mo.	100 to 150	103.4 to 106.1	2	1.5 1.0	3 2	1 1	6
7	H	F	3 to 10 da.	85 to 100	103.8 to 107.1	4	1.5 0.5	3 2	1 2	7
6	H	F	2 to 4 mo.	125 to 175	104 to 106.8		1.5 0.5	3 2	1 2	6
Total 27										25 2

\*H=Holstein-Friesian.

†Vitamins=Vitamin A, 5,000 units; vitamin D, 500 units; niacin (nicotinic acid), 50 mg.; ascorbic acid, 250 mg.

<sup>1</sup>Vitamins administered once daily. <sup>2</sup>1 calf apparently recovered, but relapsed in 10 days and died. Vitamins administered once daily. <sup>3</sup>1 calf was treated for 4 days, the others for 2 days.

<sup>4</sup>Calves moved to a clean, dry stable.



within the first twenty-four hours. This regimen was used in the treatment of 31 animals with gratifying results, as indicated in table 4. In our experience, it is desirable to administer sulfamerazine orally for a day or two after the temperature is normal, as is recommended for the treatment of similar conditions in human patients. When administering sodium sulfamerazine intravenously, precautions should be taken to prevent infiltration of the perivascular and subcutaneous tissue, since the solution is irritating and may produce serious inflammation. In the hands of an experienced operator, solutions with concentrations as high as 10 per cent have been administered. However, it is generally recommended that concentrations not greater than 6 per cent be used for intravenous therapy.

described, promotes prompt clinical recovery with less frequent dosage than is required in the case of the other sulfonamides, this compound would appear to possess decided advantages.

### CONCLUSIONS

In accordance with our clinical observations, the following conclusions are warranted:

1) In comparison with other sulfonamides commonly used in veterinary medicine, sulfamerazine is effective in smaller doses or when administered less frequently.

TABLE 4—Treatment of Hemorrhagic Septicemia and Pneumonia in Cattle with Sodium Sulfamerazine and Sulfamerazine

No.	Breed*	Sex	Age	Body wt. in lb.	Temp. when treatment was begun (F.)	Diagnosis	Dosage	Results Rec. Died
21	H	F	2 to 4 mo.	125 to 175	104 to 106.4	Pneumonia	<sup>1</sup>	21
8	H&G	F	2 to 6 yr.	700 to 900	103.2 to 106.4	Hemorrhagic septicemia	<sup>2</sup>	8
2	H	F	2 yr.	900	105.2 to 106.0	Hemorrhagic septicemia	<sup>2</sup>	2
Total 31								31

\*H=Holstein-Friesian.

<sup>1</sup>1/3 gr. sodium sulfamerazine / lb. body wt. administered intravenously in 8% solution. Two doses, 1/4 gr. sulfamerazine / lb. body wt. administered orally, one immediately after intravenous dose and other 12 hr. later. <sup>2</sup>1/3 gr. sodium sulfamerazine / lb. body wt. administered intravenously in 8% solution. Three doses, 1/3 gr. sulfamerazine / lb. body wt. administered orally, at 8-hr. intervals. The initial dose, orally, was administered immediately after intravenous dose of sodium sulfamerazine. <sup>3</sup>1/2 gr. sodium sulfamerazine / lb. body wt. administered intravenously in 10% solution. Two doses, 1/4 gr. sulfamerazine / lb. body wt. at 12-hr. intervals. The first dose was administered immediately after intravenous dose of sodium sulfamerazine.

### SUMMARY

Clinical observations regarding the usefulness of a relatively new sulfonamide, sulfamerazine, in the therapy of hemorrhagic septicemia and pneumonia in cattle are presented. A recovery rate of 95 per cent was experienced in the treatment of mature cattle, and a rate of 93 per cent in calves. Adequate dosage is essential and the following regimen is proposed: An initial daily dose of 1.5 gr. of sulfamerazine per pound of body weight administered in equal parts at eight-hour intervals, followed by a dosage of 0.5 gr./lb. for two or three days thereafter in two equal daily doses; or 0.33 gr. of sodium sulfamerazine per pound of body weight intravenously in 6 per cent concentration, followed by oral doses of sulfamerazine for a few days. In this study, no toxic or untoward effects were observed. Since sulfamerazine, used as

2) In febrile states, the response to sulfamerazine is rapid and often dramatic.

3) The results of treatment of hemorrhagic septicemia with sulfamerazine suggest that hemorrhagic septicemia antiserum may be eliminated in the treatment of this disease without any deleterious effect on the patient.

### DISCUSSION\*

CHAIRMAN SUITS.—We thank Dr. McAuliff for this interesting paper. Have you any questions?

QUESTION.—Is there much consolidation of the lungs after that treatment?

DR. McAULIFF.—Not if you treat the case early. In hemorrhagic septicemia, if the animal has been sick for several days, the temperature breaks and chronic pneumonia follows. Thus far, we have had none, but I do not know what the future holds. That is particularly true of the calves that were treated a couple of years ago. These animals are calving now, showing no evidence of chronic trouble at 2 years of age.

\*After the presentation of the paper, the following discussion was conducted.

QUESTION.—For a 450-lb. calf coming off the range, what would be the dose?

DR. MCAULIFF.—I have given as much as 1 gr./lb. of body weight and have never seen any bad effect. One group of 10 young animals weighed from 800 to 1,000 lb. I gave them 500 gr. intravenously in 250 cc. of water, which was more than a 10 per cent solution. On the second day, the cows were all eating. One of them which had had a retained placenta and metritis hadn't eaten for four days.

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### Formol-Leuco-Gelification in the Diagnosis of Equine Infectious Anemia

The serologic reaction (flocculation and sedimentation) obtained by Spackmann in the diagnosis of kala-azar by means of formalin-treated blood serum (*Brit. Med. J.*, 2, 1921: 266) was applied to the diagnosis of equine infectious anemia with favorable results by Brunswick and Davenne (*Compt. Rend. Soc. Biol.*, 125, 1937: 333). As the gelification phenomenon of serum treated with formalin has been shown by various authors to occur in the case of syphilis, malaria, leprosy, amebic dysentery, human and canine leishmaniasis, as well as in kala-azar, the reaction is not specific.

The technique described by Brocq-Rousseau (*Rev. Path. Comp. et Hyg. Générale*, 46, Sept.-Oct., 1946: 512-516), along with an extensive bibliography, consists of dropping 2 minims of formaldehyde (40%) into a test tube containing 1 cc. of the serum sample and checking the reaction against untreated serum of the same subject. There are great differences of opinion as to the time required to complete the reaction

(opacification leading to gelification), some claiming it requires thirty hours, others twenty minutes or less. Hutton-Larrier, Grimard-Richard and Nougues (*Bull. Bac. Path. Exot.*, 28, 1935: 658; *Compt. Rend. Soc. Biol.*, 116, 1934: 862 and 585), working with kala-azar and leishmaniasis, obtained reactions from immediate to twelve hours. An important observation was that opacification and gelification were independent of each other, for, after ultrafiltration the serum gets cloudy but has lost its power to gell.

In the face of these reports, Lematyer (*Bull. Acad. Vét. de France*, 11, 1938: 148) questioned the prudence of attaching too much importance to the method for the diagnosis of equine infectious anemia, but its revival without adverse comment in a classical article by a capable clinical pathologist (Brocq-Rousseau) eight years later justifies further consideration of the test. Equine infectious anemia is not easy to diagnose clinically or otherwise, and its potentiality is not trivial.

### Exit Digitalis?

The Revision Committee of the U.S. Pharmacopoeia XIII has caused to be published a "feeler" on removing digitalis from the list of official drugs, retaining only its glucosides digitoxin, digoxin, Lanatocide C, and glucosides of digitalis. In view of the refinement and scientific assays of alcoholic extracts and the reliability of actions attributed to them in recent years, the proposed change will come as a surprise to not a few longtime users of digitalis (in veterinary medicine) to prop up secondary cardiovascular failures occurring in the course of organic diseases and general systemic infections.

#### Seasonal Treatment for Distomiasis.

Olsen of the U. S. BAI reports that in the Gulf States the right time to treat animals for liver-fluke infection is late in the fall, before the onset of winter rains (*J. Parasitol.*, 33, Feb., 1947: 86-42). One or more treatments early in the summer is recommended. Hexachlorethane and carbon tetrachloride are the fasciolicides of choice.

Gradually, leptospirosis is being recognized as a common disease of man.

## Penicillin in Canine Distemper Meningitis

We have had spectacular recoveries in meningitis associated with canine distemper, where intraspinal injections of penicillin in normal salt solution were used.

### TECHNIQUE OF ADMINISTRATION

1) Pentothal sodium or pentobarbital sodium were used to produce anesthesia. (Usually, these cases are convulsive and hypersensitive.)

2) The hair was shaved along the spine from the first coccygeal vertebra past the lumbosacral junction. The area was thoroughly scrubbed with warm water and soap and painted with iodine or phermernite.

3) Using a 22-gauge, 2-inch, spinal needle, the punctures were made into the spinal canal at the lumbosacral junction, and 100,000 to 200,000 units of penicillin in 1 cc. of normal salt solution were slowly injected into the subarachnoid space.

Results in 4 cases were miraculous. Only one or two injections, two to three days apart, were necessary. However, when more than three injections were indicated the prognosis was not favorable.

In 7 cases so treated, 4 made complete recovery in three to six days. Three cases died two to three days after the treatment.

To avoid damage to the spinal cord, extreme caution was used in making the puncture. The quality of diluent used was proportionate to the size of the dog.

Two of the 3 cases lost were Chihuahuas weighing less than 5 lb. We attributed the deaths to faulty technique and to using too much diluent. In these 2 cases, 100,000 units in 1 cc. of diluent were used when probably 0.5 cc. would have been sufficient. Both dogs showed marked improvement in twenty-four hours but succumbed with symptoms of incoordination and brain trouble in thirty-six hours after the first injection.

The third fatality occurred seven days after the first of the four treatments had been given. The last puncture was made at the atlanto-occipital articulation. This may have been a contributing factor since some damage may have been done to the cord by the puncture.

In all of the cases, supporting treatment was given. We used vitamin B complex injections with 5 per cent glucose intravenously or subcutaneously, and a meat diet.

We believe that spinal injections of peni-

cillin have definite merit in these meningitis cases since a heavy concentration of the drug at the site of the microbial invasion could not be obtained otherwise.—J. Micuda, D.V.M., and D. W. Hott, D.V.M., Phoenix, Ariz.

## Scours Treated with Vinegar

A new version of "An apple a day keeps the doctor away" comes from Vermont, and from the doctor himself—D. C. Jarvis, M.D. Writing in *Jersey Bulletin* (Aug. 25, 1946), he reports five advantages to be derived from the daily administration of cider vinegar.

1) *Improved digestion and more rapid fermentation.*—When 2 oz. of vinegar was fed on the silage morning and evening to his herd of Jersey cows they ate 10 lb. less hay and only half as much grain and still increased their production of milk and butterfat. The increase was due to more complete digestion of the feed consumed, he says. As an extra dividend, the addition of cider vinegar to the ration appeared to cause the cows to repel flies, fleas, lice, and other parasites.

2) *Destruction of putrefactive bacteria in the digestive tract.*—This resulted in almost complete loss of odor of the feces as well as of the ammonia smell of the urine.

3) *Absorption of water by the pectin.*—This causes the pectin-containing substances to swell, adds volume to the intestinal content, and tends to satisfy the appetite on reduced feed consumption. Here, also, is the factor which helps to control scours, because by keeping the water absorbed in the plant tissues of the feed it acts as a binding agent and counteracts diarrhea.

4) *Detoxification of the digestive tract* by glucuronic and galacturonic acids, which are derived from the pectin. This process not only reduces the work of the liver, which normally detoxifies and eliminates the harmful substances, but it actually saves protein by utilizing these nitrogen-containing compounds.

5) *Galacturonic and glucuronic acids* are the precursors of lysozyme, and the presence of these acids in the mucous membranes enable them to dissolve practically all pathogenic bacteria.

"Streptomycin Checks TB," with variations, is a common headline of the moment.



## Panel Discussion on Poultry Problems

The following panel discussion on poultry problems was presented at the Boston Session of the Association, Aug. 18-22, 1946. Dr. F. H. Suits was chairman of the section. Members of the panel were Dr. Cliff D. Carpenter, president, Institute of American Poultry Industries, Chicago, Ill., moderator; Dr. Hugh Hurst, Utah Poultry Producers Cooperative Association, Salt Lake City, Utah; Dr. F. R. Beaudette, poultry pathologist, New Jersey Agricultural Experiment Station, New Brunswick, N. J.; Dr. E. M. Dickinson, Oregon State College, Corvallis, Ore.; Dr. C. Harvey Smith, Crown Point, Ind.; and Dr. Paul V. Neuzil, Blairstown, Iowa.

Q.—Doctor Smith, what does poultry practice offer the general practitioner of today?

A.—Poultry practice offers a challenge and an obligation. It is to the best interest of the veterinary profession, the poultry industry, and our national health if we accept that challenge and render an efficient service. Poultry raisers have in the past, and still do, come to the general practitioner for help when confronted with a poultry-disease problem, but our interest has not been as enthusiastic as it should be. Every general practitioner should have a good knowledge of poultry diseases and, when consulted by a client who has sick birds, he should be able to make a diagnosis, recommend the proper course of treatment, and make such changes of management as are indicated. If, and when, we do this our potential poultry clients will cease patronizing vendors of poultry remedies. Our slogan may well be: "Make Poultry Practice Pay."

Q.—Doctor Neuzil, you have enjoyed a nice poultry practice. When a poultryman brings a sick bird to your office, do you feel you can get a complete picture of the trouble in that flock from an autopsy?

A.—Many times, the birds presented for autopsy are not representative of the disease or condition prevalent in the flock. Observation of the entire flock is essential to a correct diagnosis.

Q.—Do you suggest a visit to the farm? If so, what is your procedure when you get to the farm?

A.—A trip to the farm is often necessary in order to arrive at an accurate diagnosis. Treatment cannot be successful without a correct diagnosis. History is sometimes more important than the information gained from autopsies. It is important to select the right birds to be examined *post mortem*. After I have arrived at a diagnosis, I make the necessary recommendations.

Q.—Doctor Hurst, you will agree with Doctor Neuzil that a visit to the poultry farm is very important. How do you proceed to render service to the poultryman when you are called?

A.—I first learn the history: feeding practices, recent changes in management, duration of the trouble, previous symptoms, and remedies used. I ask if I may examine a bird that is showing typical symptoms of the condition. During the autopsy I induce the owner to talk as much as possible because he will often give information that I can never get by direct questions.

Q.—What condition is suggested when you find a few chicks about 2 to 3 weeks of age down on their hocks and their toes turned in as though grasping for something?

A.—The condition is caused by a deficiency of riboflavin. Adding 10 per cent of powdered milk for a few days, and then reducing it to 5 per cent, will usually correct it. Dried whey or an abundance of freshly cut green feed or alfalfa-leaf meal will also supply the necessary vitamin.

Q.—If chicks show cracked feet and sores in the corners of the mouth and the eyelids stick together, what is the suggested treatment?

A.—This condition, dermatitis, may occur any time from a few days of age up to several weeks. The feathers are usually rough or broken. The cause is a deficiency of biotin in the feed of the chicks or of the parent stock. To overcome the condition, I would add 5 per cent of powdered whey or dried skim milk to the ration. Fresh, live yeast in the same proportions will correct the deficiency.

Q.—In growing pullets on range, a few birds not infrequently show evidence of incoordination, exhaustion, and paralysis of the limbs. These symptoms are suggestive of botulism. How do you handle such a situation?

A.—Look for a wet manure pile that is laden with maggots or some decaying meat, a pig or chicken or even a rat in a state of decay that the chickens have been feeding on. It may be spoiled food that has been discarded from the kitchen. Remove the cause or move the flock away from the decayed material. Give a mild laxative followed with soft, easily digested feed.

Q.—Dr. Dickinson, what, in brief, is the nature of coccidiosis in chickens?

A.—It is a protozoan infection of the small intestines and cecum. The disease often is classified as cecal or intestinal coccidiosis depending upon the species of *Coccidium* present.

Cecal coccidiosis is caused by only one species of *Coccidium* and it is seen most often in young, brooder chicks between 3 and 10 weeks of age. Bloody droppings is a common symptom.

Intestinal coccidiosis is caused by one or a combination of several species of *Coccidium* and, although it may appear in the brooder chicks, it is more often seen in young birds on range or pullets during the first few months in the laying house. The symptoms and lesions vary according to the species of *Coccidium* causing the disease.

Q.—How do outbreaks of coccidiosis occur in chickens?



A.—Clinical coccidiosis occurs when susceptible chickens ingest a large number of sporulated oöcysts within a period of a few hours.

Q.—Is the dosage of sporulated oöcysts necessary to produce clinical coccidiosis the same for all species?

A.—No. There is a wide variation in dosage necessary for the different species to produce clinical coccidiosis.

Q.—What will subclinical doses of sporulated oöcysts do?

A.—They will cause a slight coccidial infection. If subclinical doses are picked up repeatedly over a period of several days, the birds develop an immunity without showing symptoms.

Q.—Does the immunity produced by one species of *Coccidium* protect the birds against other species?

A.—No. The immunity produced is species specific.

Q.—Does the species of *Coccidium* that infects chickens infect turkeys?

A.—No. The coccidia of birds are, generally speaking, host specific.

Q.—What treatment should be recommended for an acute outbreak of cecal coccidiosis in the brooder?

A.—1) A sanitary program should be recommended that for several days will reduce or eliminate the numbers of sporulated oöcysts available for the birds.

2) Eating should be encouraged by supplemental feeding of highly palatable feed such as moist mash, freshly cut greens, and light feeding of a nutritional flush.

3) There are some sulfonamides that have a coccidiostatic effect if given before symptoms appear. When a diagnosis is made before many birds show symptoms, these compounds may help to reduce the severity of the outbreak.

Q.—Should all flocks of chickens and turkeys be vaccinated against fowlpox?

A.—No. There are isolated localities in which the chickens and turkeys have not had fowlpox. Vaccination in such places would introduce the disease. In communities where fowlpox has made its appearance, vaccination is a form of insurance.

Q.—For routine vaccination, should fowlpox or pigeonpox vaccine be used?

A.—Fowlpox vaccine should be used for routine immunization because the immunity produced by pigeonpox virus is of short duration.

Q.—What method of applying fowlpox vaccine is best, "stick" or "feather follicle"?

A.—Either method is satisfactory. It is advisable to follow manufacturer's recommendations.

Q.—How long are chickens protected following fowlpox vaccination?

A.—Protection is for the average life of the chicken.

Q.—At what age should chickens be vaccinated?

A.—That depends on the program of management on the poultry farm. There are three ages at which most fowlpox vaccine is applied—in baby chicks 5 to 10 days old, in

brooder chicks when they go on range at 7 to 12 weeks of age, and in range birds 3 1/2 to 4 1/2 months of age.

Q.—How long are turkeys protected following fowlpox vaccination?

A.—Protection lasts for about five to six months after which many turkeys gradually lose their immunity.

Q.—At what age should turkeys be vaccinated?

A.—At the end of the brooder period, 7 to 10 weeks of age. Turkeys held over for breeders should be revaccinated at a suitable time several weeks before egg production is expected.

Q.—Briefly, what are some important precautions concerning fowlpox vaccination?

A.—1) Vaccinate only flocks that are in good health.

2) Follow the manufacturer's recommendation.

3) Check 5 to 10 per cent of the birds for "takes" seven to ten days after vaccination. Revaccinate if there are less than 80 per cent "takes."

Q.—In the past few months, Newcastle disease [pneumoencephalitis] has been a very warm topic. It has been encountered in several of the states on the Atlantic seaboard and has recently been identified in the Middlewest. Dr. Beaudette, what are the symptoms in young chicks?

A.—The combination of a respiratory disease followed by nervous symptoms is the best guide for the practicing veterinarian to use in the diagnosis of the disease. This combination is particularly valuable in diagnosing the disease in young chicks. The respiratory symptoms may appear as early as 1 week of age or any time thereafter. Usually the entire flock is affected, and, almost immediately or sometimes only after an interval, the nervous symptoms make their appearance. The nervous disturbances include paralysis or paresis of the legs, wings, or head and neck, and incoördination of movements. The mortality in chicks may be as low as 10 per cent or as high as 90 per cent, and the average is usually at least 20 per cent.

Q.—What lesions are found on autopsy?

A.—On postmortem examination, chicks show some mucus in the trachea and bronchi, or caseous plugs in the bronchi. The air sacs are almost always clouded and may contain yellow, slimy material, or caseous masses.

Q.—Is there any similarity between Newcastle disease [pneumoencephalitis] and chick bronchitis?

A.—In general, the symptoms and autopsy findings are similar, except that in bronchitis nervous symptoms have never been seen.

Q.—How does the disease affect adult birds?

A.—In adults, the respiratory symptoms are like those seen in chicks, but the incidence of nervous symptoms is much lower and, at times, nervous symptoms are not seen. Likewise, the autopsy picture is essentially the same as in chicks except that no caseous plugs are found in the bronchi. There is also less clouding of the air sacs.

Q.—How does it affect a flock in heavy production?

A.—A prominent feature of the disease in laying birds is the sudden drop in egg production. This may reach absolute zero in four days to a week. During this sudden drop, the incidence of floor eggs increases and many eggs have soft shells or no shells. The length of time that a flock stays out of production varies, but about five to six weeks elapse until the flock reaches its former rate of production. The flock may go into a molt which, in some cases, may leave the birds without feathers. In this instance, production is not soon regained.

Another feature is the effect that an attack has on egg-shell color, shape, and texture. Heavy breeds may lay white eggs when production is resumed. Leghorns may lay colorless eggs. The shell is often rough and misshapen.

Q.—What are some of the other conditions that may be confused with this disease?

A.—It must be differentiated from laryngotracheitis, bronchitis, avian encephalomyelitis (epidemic tremor), vitamin E deficiency, and coryza.

### Generalized Tuberculosis in a Goat

Because tuberculosis in the goat is believed to be rare and also because there is little in the literature regarding the symptomatology, the following record is given as a possible aid to others who might see a similar case.

This goat was purchased because of the illness of a member of the family, in the hope that the goat milk would be an aid to recovery. For four months, the milk was used by the members of the family. The goat was emaciated and during this period would not fatten, regardless of the quantity or quality of feed furnished. Because of this, a test was requested. Milk production was maintained at 3 quarts daily.

The intradermal tuberculin test was administered, resulting in a strong reaction. Immediately, a subcutaneous dose of tuberculin was injected. Generalized symptoms, as well as the temperature rise, occurred very shortly, making it necessary to start readings as early as two hours following injection. The temperature reaction disappeared inside of ten hours. The generalized symptoms held on for thirty-six hours, and included enlargement of the involved regional lymph glands, lameness, extreme lassitude, and rapid, shallow breathing.

When the animal was destroyed seven days after testing, the postmortem examination showed the following:

1) The entire intestinal tract, mesentery, peritoneum, and lymph system were studded

with caseated and calcified tubercles of pin-point to pea size, with a few suppurating areas. One could hardly lay a fingertip on any area without touching at least one tubercle.

2) The lungs, mediastinum, and lymphatic system of the region were thickly studded with caseated and calcified tubercles of pin-point to twice pea size.

3) The udder and supramammary glands contained suppurating foci, as well as caseated and calcified tubercles.

4) The prescapular lymph glands contained suppurating areas as well as small caseated foci. These glands enlarged six to eight times in size during the generalized reaction.

Laboratory examination of the tissues submitted showed clearly the presence of acidfast rods morphologically similar to *Mycobacterium tuberculosis*. Typing of the organism is being carried out by the Pathological Laboratory, Bureau of Animal Industry. I hereby acknowledge the assistance of Jensen-Salsbery Laboratories in the laboratory diagnosis made in this case.

A question arises in my mind: Is tuberculosis of goats more prevalent than we have believed? How many goats are carrying tuberculosis which is not discovered due to their not being tested?—A. A. Davies, D.V.M., Linden, Mo.

*Chemotherapy of Avian Coccidiosis.*—Chicks affected with coccidiosis were successfully treated with sodium sulfamerazine mixed with the growing mash at the rate of 1 oz. per 15 lb., or 1 oz. to 3 imperial gallons of drinking water. Sodium sulfamerazine was effective at the rate of 1 lb. per 240 lb. of mash. The medicated mash is fed for four days beginning as soon as the droppings disclose evidence of the infection.—Publication 788, Division of Animal Pathology, Canadian Department of Agriculture, March, 1947.

*Penicillin in Swine Erysipelas of Turkeys.*—Highly promising results have been obtained with penicillin in the treatment of swine erysipelas in turkeys.

In experiments conducted by Dr. C. G. Grey of the U. S. BAI, the use of penicillin reduced mortality to 10 per cent, while 100 per cent of untreated birds, similarly affected by the disease, died. The drug, suspended in peanut oil, was given in doses of 20,000 units, repeated four times, one day apart. The wattles were found to be the portal of administration.

### Suspected Arthritic Brucellosis in a Gilt

Early last fall, I was called to see a pig with "blood poisoning." The pig, a 125-lb. Berkshire gilt, was reluctant to move; the left hind leg was swollen one and a half times its normal size from the coronet to, and including, the hock; the swelling was hard, feeling as if the bones themselves had actually swelled. The owner mentioned that he had noticed a "red spot" in the interdigital space; this was not apparent at the time of my examination. There was a soft swelling in the left inguinal area. The pig was not eating; temperature was 106.5 F. All of these symptoms had appeared within twenty-four hours.

Treatment consisted of the administration of 50,000 units of penicillin in oil intramuscularly in the gluteal region. Sulfathiazole, 15 gr., was given *per os*, and the owner gave 15 gr. three times a day.

I returned about sixteen hours later. The temperature was normal, the appetite was good, the swelling in the leg and inguinal region were about the same. The severe pain was still present. Repeating the injection of penicillin, 50,000 units in oil, I advised the owner to continue the sulfathiazole as before. I also withdrew sufficient blood from the anterior vena cava to send to a laboratory for a *Brucella* agglutination test. This test was reported positive in the first two dilutions.

Two days later, there was a breaking out at the coronary band, anteriorly and posteriorly. The owner observed that quite a bit of pus had discharged. The foot was dressed with an ointment and covered with a bandage. Appetite was good, and the pig was using the leg with evidence of bearing less pain.

Ten days after the initial symptoms appeared, the drainage from the foot had stopped; granulation was beginning at the site of breaking out. The swelling had nearly left the leg and left inguinal region completely.

This farm has 3 or 4 brood sows, no boars, 15 or 20 pigs for fattening, the latter about the same size as the affected pig. There was no history of abortion or mismatings in the sows here, nor in the neighbor's herd where these sows are taken to be bred, nor has there been any orchitis in the boars used.

According to the owner, he had lost 2 pigs

previously, at different times, with similar symptoms. The front leg was involved in both cases, and the swelling extended up the leg rapidly; the pigs were dead one and a half to two days after the initial symptoms appeared. These pigs weighed about 100 lb. each.

Reviewing the case, the symptoms seemed to indicate that the patient was suffering with the acute arthritic form of brucellosis. Any comments will be sincerely appreciated.  
—J. G. Shute, V.M.D., Doylestown, Pa.

### One World Worms

The One World of Wendell Willkie, which struck with force a new idea at the politico-economic level, is, of course, decades, and in some respects, centuries old, to students of disease-producing agents . . . Back from the Pacific come a thousand-odd Americans with schistosomiasis, and a few times that many with filariasis, and several multiples more with ancylostomiasis (*sensu strictu*). To homes widely dispersed throughout the land go these ex-service men, to live a lifetime in familiarity with the strangely sounding names of their distantly acquired helminthiases.—*Excerpt from "This Wormy World" by Norman R. Stoll, Rockefeller Institute for Medical Research, in the Journal of Parasitology, February, 1947.*

### Protection from *Brucella* Vaccination

Dr. C. K. Mingle of the Animal Disease Research Center, Beltsville, Md., has this to say on the subject of *Brucella* vaccination: "Another factor that must be considered in this regard is the regrettable tendency of some cattle owners to accept vaccination as a panacea for all brucellosis problems and use it as an excuse for neglecting good sanitary and herd management practices.

"Brucellosis vaccination has been handicapped from the beginning more by misuses such as this than anything else. It must be remembered that the degree of serviceable protection afforded by the vaccination depends to a considerable extent upon the manner in which it is employed. However, the judicious use of vaccination, accompanied by intelligent sanitary management, can and is providing valuable help in limiting the spread of bovine brucellosis."



## Q Fever and Others

The first 16 pages of the *Journal of the American Medical Association* (March 22, 1947) are devoted to five papers on diseases of mutual interest to human and veterinary medicine. The first four papers (by Topping, Shephard, Irons, *et al.*) describe the explosive outbreak of Q fever which occurred among stock handlers and slaughterhouse workers in Amarillo, Texas, in March, 1946; the fifth paper (by Meyer and Eddie) discusses human virus infections of animal origin—rabies, psittacosis, and encephalitis.

The Q fever outbreak in Amarillo (pop. 70,000), famous American livestock center and said to be the site of the largest livestock auction company in the U. S. A., involved employees of three places handling livestock: a stockyard, a livestock auction company, and a packing plant. Of the people exposed, 3 cases occurred out of 3 members of a cattle-train switching crew; 3 brand inspectors out of 4 employed; 3 cases among 10 regular employees of the auction company; 15 out of 22 stockyards workers; and 31 out of 97 employees in the packing plant. This makes a total of 55 cases of Q fever among 136 people exposed, an overall attack rate of 40 per cent. There were two deaths.

The investigations were made from four to six weeks after the outbreak and included epidemiologic studies, clinical data, serologic observations, and isolation and identification of *Rickettsia* spp. from two human subjects. The findings incriminated the handling of, or close exposure to, livestock and/or their products; there was no evidence of person-to-person spread. Q fever is, therefore, an occupational disease of clinical veterinary medicine like brucellosis, anthrax, rabies, and psittacosis.

The clinical data, obtained mainly from 18 hospitalized cases, showed temperatures on admission from 97 to 105 F.; fever duration from five to forty-three days; pulse, 84 to 120; respiration, 18 to 32; symptoms at onset, headache, nausea, malaise; x-ray findings, usually atypical pneumonia. On admission, the average pulse rate was 94, the average temperature, 101.5 F.; fever usually persisted for one to two weeks. Serologic studies, using yolk sac antigen prepared with a Q fever strain known as "American Nine Mile," showed that blood

serum titers of patients were usually low during the first week of illness and then reached and maintained high levels (1:320) for several weeks. The serologic observations confirmed the diagnosis of Q fever. Moreover, isolation of a rickettsial agent apparently identical with *Rickettsia burneti*, the causative agent of Q fever, was carried out on the serums of 2 cases.

The article by Drs. K. F. Meyer and B. Eddie of the Hooper Foundation is a clear, concise treatment of the rabies problem, psittacosis, and "arthropod-borne virus types of encephalitis" of animal origin. In reviewing the human-animal relationships of the three types of infections, the authors stress that "vector control constitutes the most effective weapon which can be forged to prevent the injuries induced by accidental aberrant parasites."

## Sixide

Sixide (benzene hexachloride), proprietary insecticide discovered by the Commercial Solvents Corporation, destroys arthropods resistant to DDT, among them the boll weevil and its eggs and the cotton aphid (*Sci. Illustrated*, April, 1947). A \$600,000 plant has been constructed at Terre Haute, Ind., to produce it. Benzene hexachloride, also called 666, is said to be harmless to warm-blooded animals, deadly as it has proved to be to the boll weevil.

*Recognize Foot-and-Mouth Disease.*—The blisters and fever that are the signs of foot-and-mouth disease should be as dreaded as the symptoms of smallpox among human beings . . . which [f.-and-m. disease] spreads like wildfire and must be fought quickly and effectively lest it become a conflagration. Every livestock man should know the facts about foot-and-mouth disease.—*John R. Mohler (1942) quoted by American Cattle Producer.*

*Advertising Medical Products to the Public.*—The Council of Pharmacy and Chemistry of the AMA, at its meeting of Nov. 1, 1946, considered the addition of certain products that may be advertised to the public under its rulings. The Council considers it feasible to enlarge the list and voted that the list be aggrandized.

Nomenclature has played the mischief with brucellosis.—*Alice Evans.*

## BCG Vaccine Improved

This "vaccine of the future" (*Am. Rev. Soviet Med.*, Feb., 1946) which is already employed for mass vaccination against human tuberculosis has been improved in respect to its perishability and facility of production by lyophilization, making it in dry form. For use in far-away places lacking qualified personnel, loss of vitality was a hindrance. Dried in 50 per cent glucose solution and stored at room temperatures for sixteen months, the growth of the bacilli was equal to that in liquid vaccine, two months old. Dry glucose vaccine, a year and a half old, and tested on animals, differed but little in immunizing value from fresh liquid vaccine. Experiments on the drying of BCG have been conducted by the Central Institute of Experimental Medicine, U.S.S.R., since 1937.—*Public Health Report*, Feb. 7, 1947.

## Anthrax Vaccine

B. S. Levin and J. Stein have developed an antianthrax vaccine that is so nearly avirulent that it can be used on experimental laboratory animals. The various steps taken in the new method which they use, as well as methods of testing and results of field use, are given in detail in a series of articles in *Refuah Veterinarith*, Tel Aviv, Palestine (Jan., 1942; June, 1942; and Feb., 1943).

An apparatus has been developed which holds the culture at 27 C. and automatically subcultures at intervals of three minutes. In this way, one year's subcultivation gives the equivalent of 500 years of culturing in ordinary mediums under usual conditions.

The new variant culture produces a well-defined capsule and differs in this respect from avirulent cultures previously reported. Substantial amounts of the new strain of *Bacillus anthracis* failed to kill rabbits, guinea pigs, and mice, but did protect them against a fairly virulent strain of the organism. Mice could be injected with 20 million of the avirulent bacteria without producing death, while 2,000 of the original strain were invariably fatal. Guinea pigs withstood injection of 400 million of the avirulent bacteria, while goats injected with 130,000 sheep doses showed no rise in temperature, no loss of appetite,

and no swellings. This new culture does not sporulate, nor does it revert from the original R to the S form following culture on ordinary mediums or injections into animals.

Weekly subcultures were studied, and from the sixteenth week onward the culture did not revert to its original virulence. Vaccination experiments involving some 5,000 laboratory animals have been completed. Following vaccination with this avirulent strain, 6.8 per cent of animals challenged with a virulent strain died, as against 70 per cent of the unvaccinated controls. Field experiments are in progress.

## Duration of DDT Effectiveness

Pasture experiments indicate that the first spraying of cattle with a DDT suspension will be effective for two weeks, the second for three weeks, the third for four weeks, and the fourth for the remainder of the pasture season in Kansas. Mr. Ray Cuff, of the National Livestock Loss Prevention Board, so informed the National Association of Insecticide and Disinfectant Manufacturers. He added that such spraying reduced the incidence of anaplasmosis and pink eye while increasing the gain of beef cattle an average of 0.5 lb. daily and improving the grade sufficiently to demand 25 to 50 cents more for each 100 lb. at time of market. Dairy cows produced 8 to 20 per cent more milk when sprayed on the above schedule.

*Improve Rabies Vaccine.*—Scientists of Michael Reese Hospital (Chicago) have quickened the immunizing power of rabies vaccine by the use of ultraviolet rays to attenuate the virus contained in brain tissue.

*Mold Checks Growth of Brucella.*—Dr. Grace A. Beal, bacteriologist of the University of Chicago (*Proc. Soc. Exptl. Biol. & Med.*, Jan., 1947), isolated a mold from the ground inhabited by cattle affected with brucellosis that checked the growth of *Brucella in vitro* in a dilution of 1 to 64,000. Its dynamics *in vivo* have not been determined nor has it been produced in pure form. Its provisional name is SD-17.

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# NUTRITION

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## Formulating Dog Foods of High Quality

L. D. FREDERICK, D.V.M. and R. E. GRAY, B. S.

*Chicago, Illinois*

ADEQUATE nutrition for the dog is an important problem among feeders of dogs and manufacturers of dog food. A well-nourished dog is a matter of economic concern for the commercial or professional breeder of dogs, and of personal pride for the individual pet owner. The veterinarian is especially interested in maintaining dogs in optimum states of nutrition.

Types of dog food vary from commercially prepared, nutritionally balanced foods to hodge-podge mixtures thrown together by the feeder. The city-dwelling pet owner may find it more convenient, more economical, and more sanitary to use canned foods which at the same time assure good nutrition. Many breeders routinely use a standard maintenance ration, such as a good quality, meal-type food, to which they add various supplements during times of extraordinary requirements such as reproduction. A few feeders still resort to the use of table scraps or whatever is available at lowest cost, regardless of nutritional quality.

### CANNED FOOD POPULAR

During the years immediately preceding World War II, canned dog food became very popular. Large quantities were manufactured and sold. In general, the foods marketed in sizable amounts were satisfactory nutritionally. Some of them made outstanding records in experimental feeding trials. One was fed as the exclusive ration over a period of several generations, no supplements whatsoever being used. A typical canned dog food is composed of meat, meat by-products, bone, cereals, soybean flour, salt, and fish-liver oil. The protein content of the quality moist foods is a minimum of 10 per cent.

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When tin cans became unavailable for the packaging of dog food at the beginning of the war, the users of canned dog food were forced to turn chiefly to either dehydrated or dry-type foods. A few were able to obtain frozen or fresh-packed products, or they resorted to horsemeat. Rationing limited diversion of table meat for pet feeding.

The dehydrated foods followed the canned food formulas rather closely, in general, until a government order was issued limiting the protein, and particularly the animal protein, content of pet foods. While, perhaps, not quite so appetizing as canned dog food, the dehydrated products served very well. Some performed just as well as the canned foods had previously. It was possible to feed them as the exclusive ration over a number of generations.

### DRY TYPES LESS CONVENIENT

The dry-type foods are composed of ingredients quite different from those used in canned or dehydrated foods. Instead of fresh meats and meat by-products, it is common practice to use meat meal as the principal source of animal protein. Usually, these foods consist of a major portion of processed cereals: cereal flakes, residues from breakfast-food manufacture, etc. Added mineral and vitamin supplements complete the formula. The dry-type foods may be the more economical type of ration to feed in certain cases, supplemented when necessary. However, they lack the convenience and dog-acceptability of the canned or dehydrated foods.

In general, most dry-type rations are satisfactory as maintenance rations, but require supplementation when it is desired to put the dog in top condition or for best results during reproduction. When meat is used as the principal supplement, care should be taken that the total ration provides adequate amounts of minerals and



the fat-soluble vitamins. There is some indication that dry-type foods are likely to be slightly deficient in some factor present in raw meat. Possibly this is a heat-labile, B-complex factor, or an amino acid.

During the early years of the dog-food industry, there was little or no scientific basis for formulating a nutritionally complete canine ration. There were no means

protein and amino acid requirements during all phases of the life cycle.

The successful results obtained in feeding the various commercial dog foods over periods of several generations should yield valuable data concerning optimum amounts of the various nutrients required in a well-balanced ration. These data must be used with extreme caution, however. Recent dis-

TABLE I

		Requirements for good dog food (dry basis)		Present in canned dog food (moist basis)      (dry basis)	
Moisture	%	6.00		71.50	6.00
Fat	%	5.30—	13.00	3.21	10.58
Protein	%	22.00—	38.00	11.50	37.92
Calcium	%	1.00—	1.74	0.62	2.04
Phosphorus	%	0.75—	1.32	0.39	1.29
Calcium-phosphorus ratio—1.0:		1.20—	1.50	1.59	1.59
Vitamin A (U.S.P. units/lb.)		510.00—	2,000.00	600.00	1,974.00
Vitamin D (U.S.P. units/lb.)		80.00—	300.00	83.00	273.00
Thiamin (mg./lb.)		0.35—	0.80	0.52	1.70
Riboflavin (mg./lb.)		1.20—	3.50	3.13	10.20
Niacin (mg./lb.)		13.20—	20.00	22.90	75.50

other than actual dog-feeding experiments for determining the nutritional adequacy of any given ration. Since dog-feeding studies are rather lengthy, relatively less time-consuming rat growth and generation studies were frequently used as criteria of the nutritive quality of dog foods. There was no assurance that the nutritional requirements of the rat and the dog were strictly comparable. There is increasing evidence indicating that a food entirely adequate for the rat may not necessarily be adequate for the dog, and *vice versa*. Of course, any gross deficiency would be readily apparent in the performance of either animal.

#### GUARD AGAINST DEFICIENCIES

Generally, the better quality products were formulated to contain considerable excesses of certain constituents, as a safety factor against nutritional deficiencies. Considerable attention was given to palatability and dog acceptance. These are factors of primary importance in a dog food.

During the last several years, much experimental work has been done in university and industrial laboratories in an effort to determine the minimum dietary requirements for growth and maintenance of the dog. Little study has been given to the quantitative determination of the extra requirements for reproduction. Further information is desired concerning the quantitative

coveries in the field of nutrition have indicated that quantitative relationships may exist between various vitamins, or between vitamins and amino acids. The requirement for thiamin varies somewhat with the carbohydrate content of the ration.

#### CANS PROTECT QUALITY

There is increasing evidence that the pyridoxine requirement may vary with the protein content of the ration. There appears to be a direct relationship between the niacin and the tryptophane content of the ration.

A great deal of attention is being given to the intestinal synthesis of vitamins. This apparently plays an important rôle in the normal nutrition of the animal. The type of ration fed influences the synthesis of various vitamins in the intestine of the animal, and this in turn is a factor in the apparent vitamin requirements.

With the return to canned dog food, the manufacturers of quality products are prepared to make a product just as good as, or possibly better than, the one manufactured before the war. By taking advantage of the accumulated knowledge of canine nutrition, it is possible to utilize the available ingredients much more efficiently and economically.

It has been shown that the optimum level of protein to meet all requirements of the dog may lie between 22 and 38 per cent. A significant proportion of the total protein

should be from animal sources. While foods containing protein, one-third of which is of animal derivation, have proved satisfactory, it is preferable that at least one-half of the total protein should be from this source.

#### BALANCED FORMULA FOR CANNED DOG FOOD

The following table indicates the range within which the optimum requirements of a well-balanced dog food will probably be found, together with the approximate composition of a successful canned dog food.

The importance of using only high quality ingredients in a dog food should be emphasized. Nutritious ingredients of high quality, their goodness not destroyed by over-processing, are essential for a well-balanced ration. Their use provides sufficient quantities of the lesser known, but essential B-complex factors, and perhaps other essential nutrients not listed above.

The reliable dog-food manufacturer, equipped with current knowledge of canine nutrition and a capable research staff to put this knowledge into practice, can be depended upon to produce a quality dog food.

#### Potatoes for Poultry Feed

D. C. Kennard, Ohio Agricultural Experiment Station (Bull. 243), comparing the protein, carbohydrate, fat, and moisture content of corn, wheat, and potatoes, shows that, with the exception of fat, the values of these three common food products do not vary materially. The table reveals known facts seldom brought together for study, to wit:

Percentage composition	Corn	Winter wheat	Potatoes
Moisture content . . . .	10.5	10.9	10.50
Protein . . . . .	7.5	8.7	8.90
Carbohydrates . . . . .	67.8	67.8	68.05
Fat . . . . .	4.6	1.4	0.40
Total digestible nutrients . . . . .	79.9	77.9	77.30

Experimental studies of the practical value of potatoes for pullets, broilers, and layers indicated that 4.1 to 4.67 lb. to displace each pound of the basal ration was "wholesome, palatable, and generally beneficial." The potatoes were boiled, mashed, and mixed with dry mash, half and half, and supplemented with vitamin A- and D-containing oil. The feed can be fed at the rate of 5 to 8 lb. per 100 layers daily. Other details are described.

#### Riboflavin Deficiency in Calves

In calves that grow poorly, eat little, scour, and salivate and lacrimate excessively, riboflavin deficiency may be a factor if there are lesions in the corner of the mouth, along the edges of the lips, and at the navel. Illinois investigators found these lesions (*J. Nutr.* 33, (Mar. 10, 1947); 263-269) and also noted hyperemia of the buccal mucosa and loss of hair.

#### Surplus Potatoes for Livestock Feeding

The 1946 growing season was so favorable to potato production that the federal price-support program had a surplus of 20 million bushels. Foreign governments and UNRRA took only a negligible amount of this huge surplus, because shipping space was not available and because spoilage in transit is always great. At the USDA surplus price of \$4 per ton, these potatoes can be used to advantage in the feeding of livestock.

*Vitamin E.*—From information thus far available, evaluating the therapeutic results of vitamin E is not possible. There are, however, sufficient grounds to justify further study of its clinical use, especially in certain types of cardiovascular diseases.—*From Current Med. Digest, Feb., 1947.*

Vitamin E, commonly used in veterinary medicine in the form of wheat germ oil, was shown to act by increasing carbohydrate metabolism in work conducted by Butturini (*Gior. Clin. Med. (Italy)*, 26, (1945): 90-96), in his efforts to determine its effects on glycemia and sugar tolerance of diabetic subjects.

Carotene content is 20 to 50 times higher in the leaf blades of corn than in the remainder of the plant, according to Wisconsin workers.

The big-horned sheep population has declined because of deficiency of mineral salts in the granitic soils of their native habitat.

A growth-promoting factor present in butter from cows receiving fresh grass has been identified as vaccenic acid by Dutch investigators.—*J. Nutr.*, Mar. 10, 1947:360.

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# EDITORIAL

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## Rhode Island Supreme Court Upholds Recognition of Approved Schools

In a unanimous opinion of great significance to all medical licensure in the state, the Supreme Court of Rhode Island ruled, on March 28, 1947, that the 1939 law restricting examinations for veterinary licenses to graduates of "approved" schools is constitutional. This decision reversed the finding of the Superior Court in June, 1946, in which it was declared that that part of the state law which restricted candidacy for veterinary licenses in Rhode Island to graduates of schools approved by the American Veterinary Medical Association was "unconstitutional and void" and a delegation of power unwarranted under the state constitution.

The original action (Cyril James Allen v. Rhode Island State Board of Veterinarians *et al.*) grew out of the refusal of the State Board of Veterinarians to permit a resident of the state, who was a graduate of the School of Veterinary Medicine, Middlesex University, Waltham, Mass., to apply for examination for a license; the Board held that he was ineligible because the school is not on the AVMA's approved list. In the Superior Court decision in the case (the JOURNAL, Aug., 1946: 165-166), the judge said it would seem, on principle, that the General Assembly is without power to vest in a body outside the state and not subject to its jurisdiction the authority to make or create standards of conduct binding on the citizens of Rhode Island. Legal authorities so hold, the court said, and he therefore so ruled.

The Rhode Island State Board appealed the decision, apparently under some handicap, since, in the argument before the Supreme Court, counsel for the State Attorney General agreed with the petitioner's counsel that the provision was probably unconstitutional. That particular section of the practice law challenged by the petitioner

reads as follows: "Sec. 4. Any person not entitled to registration under section three of this act, who has attained the age of twenty-one and is a graduate of a regular veterinary, medical, surgical, and dental school or college of a *standard* (italics ours) recognized by the American Veterinary Medical Association, may apply to said board for examination with reference to his skill and knowledge of veterinary medicine, surgery, and dentistry, and be so examined at reasonable times, to be determined by said board." In its opinion, the Supreme Court said: "There can be no doubt that the legislature intended to regulate the practice of veterinary medicine in this state, and that in furtherance of such a purpose it required that an applicant for admission to that practice should be a graduate of a 'regular' veterinary school or college, as graduation therefrom would indicate, to some extent at least, that the applicant had prosecuted a necessary course of study. But the legislature undoubtedly appreciated that, although an institution might term itself a regular veterinary school or college, its course of instruction might be inadequate or otherwise defective because of the immaturity of the institution, or a deficiency of curriculum, or doubtful competency of instruction, or a combination of these elements. The legislature therefore deemed it necessary to provide that the school or college which the board could recognize must meet a reasonable and fixed standard of competency."

From the language of the legal section involved, the inference was clear, the court said, that the legislature finally decided to adopt for itself *the standard* of the AVMA as fixed and known in 1939, when the practice law was enacted, in the apparent conviction that the graduate of any veterinary school or college which satisfied such standard should be admitted by the board to take



the required examination. It therefore provided, the court pointed out, that the veterinary school or college from which an applicant graduated must be of a *standard* recognized by the AVMA, that is, when found by the board to be of a standard equal to that fixed and approved by the Association as of that date.

In conclusion, the court stated that the challenged portion of the act, as construed, did not violate the state constitution and was therefore constitutional. Hence, the court denied the petition for a writ of mandamus which would require the state veterinary board to grant an examination, but held that the petitioner could renew, if he saw fit, his application for an examination. "At that time," the court said, "it will be the duty of the board to determine, in accordance with this opinion, whether the school or college of which he is a graduate meets the standard. . . ."

The importance of the foregoing decision is apparent. Especially noteworthy is the judicial interpretation in which the court clearly distinguished between a *standard* of educational qualifications established by a professional association (in this instance, the AVMA) and a mere statement of *recognition* predicated upon the standard. In reading the opinion, it is apparent that the three words, "*of a standard*," in the challenged section (see above) of the Rhode Island act were the deciding factor in the court's favorable ruling. Veterinary examining boards in other states may wish to review their practice acts in the light of the Rhode Island decision.

### The Saskatchewan Pattern

A practitioner's experience with the Saskatchewan plan of providing veterinary service in sparsely settled districts, as published in the *Canadian Journal of Comparative Medicine and Veterinary Science* (Feb., 1947), appears to show that this important agricultural and livestock province of the Northwest has hit upon a workable means of accomplishing that purpose. In effect, the provincial parliament passed a law authorizing municipalities (counties) or groups of them to employ veterinarians partly subsidized by the provinces. Except for thickly populated places, there's no dodging that trend if the world is to be properly nourished.

Dr. Robert Connell, Aberdeen, Sask., relates his experiences as a partly subsidized private practitioner in the North Battleford Veterinary Service District, 75 mi. long with an area of 1,200 sq. mi., in which he was able to earn \$3,605.21 in seven and a half months, \$1,249 of which was from the provincial-municipal subsidy.

### Blood Brothers Over the Counter

Once upon *our* time and *yours*, patent medicine was the antithesis of self-respect. Whereas, in this *anno Domini*, its blood brother—the scientific product for unscientific use—goes over the counter without provoking a blush. Garbed and disguised in the raiment of Paracelsus, the veterinary Lydia E. Pinkham's of today barged into the field with the Staff of Aesculapius and the Oath of Hippocrates without batting an eye as if nothing can be done about it, anyhow. Even unto the days of the spring wagon and fancy surrey, the makers of cow tonics, spavin cures, condition powders, cough medicines, and pain-killing liniments couldn't crash the doctor's gate.

But the remedy boys have come a long way. They used to be glad to make the ad pages of careless newspapers but never, like now, the white space of the technical periodicals. That is to say, we trusting souls pass the Sloan's, the Giles', the Gombault's, the Kendall's, the Humphrey's through the turnstiles without watching what they are doing to our innards. Know what I mean? The fakers of *then* and the racketeers of *now* are blood brothers to be neutralized, or else. They are Rh incompatibles circulating in the blood of a useful profession. Theirs is no more compatible with the red blood of veterinary medicine than was the patent medicine in the heyday of the unholy nostrums. As a matter of fact, remedies for disease scientifically made and advertised for unscientific use are the greater cancer—that magnificent scheme of decay that eats out the center and runs wild all around 'til it kills.

It's the old story of losing our heads in science and deserting the professional questions involved in its application. Better quit looking around for someone to blame, for that means you, the user, and no one else on the long run. Were the superscientific laboratories rated *by you* according to the loyalty shown to the dignity of your profession, we wonder what would happen.

## Farm Animals, Propagators of Hog-Cholera Virus

Where does hog-cholera virus breed between outbreaks? When we pundits of the armchair barge into the Land of the Baffled we're told that every insect, sty, stall, niche, and fence corner has been searched in vain for the agent since the days of Dred Scott and Horace Greeley. Anyhow, we thought James Law had settled that in 1879 when he cultured the virus (fresh blood) of cholera-infected hogs in cattle and reinfected pigs with the infected medium (cattle blood). (See, *Special Report*, USDA, 1880:69-84.) Zichis repeated the demonstration in sheep, using commercial hog-cholera virus. (See, *J.A.V.M.A.*, 95, Sept., 1939:272-277.)

But, the most revealing experiment of this type was the extensive work of Jacotot of the Pasteur Institute of Paris (*Ann. Inst. Pasteur*, 62, 1939:516; abstr. in *Encyclopédie Vét. Périodique* (Lyon), 3, 1946:296.) Jacotot injected fresh hog-cholera blood (virus) into a variety of animals and studied the results, critically, by serial passages and reinoculations. Like Zichis, he sensed the need of keeping the farm animals among the propagators of hog-cholera virus, thus saving futile hunting among the passive carriers of the hog-lot.

The Pasteur investigation used: 6 horses, 4 calves, 4 water buffaloes, 4 hares, 12 rabbits, 4 dogs, 4 primates, 11 pigeons, 6 chickens, 3 pheasants, 6 guinea pigs, and many sheep and goats.

Transmission was effected by various routes, among them: (1) subcutaneous, (2) intratesticular, (3) intracerebral, (4) *per os*, and (5) by contact exposure.

Positive infection was obtained from subcutaneous injections in 4 of the 6 horses, all of the 4 calves, 2 of the 4 buffaloes, 1 of the 4 hares, 2 of the 12 rabbits, 1 of the 4 dogs, 1 of the 11 pigeons, none of the 6 chickens, 1 (doubtful) of the 3 pheasants, and all of the sheep and goats. One buck and 1 ram were infected by intratesticular inoculation. Transmission *per os* was positive in 1 goat. Contact exposures were positive in sheep and goats.

In the small ruminants, the injected virus evolved rapidly and, in these groups, serial passages were successful. But, in all instances, the reaction was inapparent.

The presence of the virus was proved by reinoculating pigs—the one farm animal that sickens from hog-cholera virus.

Quoting the author's conclusions: "It is logical to consider receptive animals, the small ruminants in particular, as capable of propagating hog-cholera." (Emphasis ours.)

Back to the pundits of the armchair. What seems peculiar is that these 68-year-old, scientific proofs have not aroused some curiosity among the hunters for extraporcine habitats of hog-cholera virus. Presuming that the inapparent cases are capable of spilling virus-contaminated urine about the farm, it is not hard to imagine the many ways infective material could be carried from place to place independent of hog-cholera outbreaks.

## Cricket for Bench Show Veterinarians

In reviewing the reconversion of dog shows to their peacetime mission, the October, 1946, issue of *American Kennel Gazette*, official publication for the American Kennel Club, touches the veterinary service rendered to the exhibitors in the protection of one another: "There can be no question that medical inspection of all dogs entered in a show is of prime importance to all concerned." The rule reading "every dog show shall have one or more qualified veterinarians," is recommended to be changed from *have* to *employ*, making mandatory the protection against the spreading of infections to the four winds, which was once so common at fairs, stock shows, and community sales.

The mobilizing of animals from many sources, after being exposed to the hazards of transport, and then scattering them to as many and more places after the event, is Hazard No. 1 in the handling of animals. It is, therefore, complimentary to the AKC to have pressed this reform. It's a humane and economical step comparable to the trend in the handling of animals. The editorial also takes the position that the bench-show veterinarian, inasmuch as he serves in a professional capacity, should be paid since the task is not a hobby or avocation like the work of most of the other officials, and also that he should be provided with suitable quarters, for his and the patrons' convenience.

# CURRENT LITERATURE

## ABSTRACTS

### Leucemia in Cattle

The etiology of leucemia in cattle and other mammals remains obscure. Parenteral chronic protein poisoning was produced by injecting calves intravenously with varying amounts of skim milk. Some calves were also injected intravenously with cultures of *Streptococcus*, and others were intraperitoneally injected with suspensions of spleen tissue. Only a small number of the test animals showed clinical leucemia, even after years of observation and after having been selected from strains of cattle known to be leucemic.—[J. Egeha]: *Some Experimental Investigations in the Etiology of Leucemia in Cattle. Am. J. Vet. Res.*, 8, (Jan., 1947): 57-65.]

### Conferences in the Supreme (Soviet) Veterinary Administration

Hemorrhagic septicemia of cattle and sheep was discussed at a conference held (presumably in Moscow) on Feb. 12, 1946. Veterinary representatives from Azerbaijan, Armenia, and Georgia doubted that each case reported was true pasteurellosis. They resolved to send to Transcaucasia, in June, a "brigade" of representatives from the All-Union Institute of Experimental Veterinary Medicine and from the Supreme Veterinary Administration to work with the local practitioners in investigating the problem. It was also resolved to request the Government Scientific-Control Institute for Veterinary Preparations to speed the production of hemorrhagic septicemia vaccine. Transcaucasian veterinarians were instructed to send local strains of the organism to the Institute for study.

Brucellosis vaccination was discussed at a conference held Feb. 24-27, 1946. On the basis of extensive experiments with strain 19 vaccine, conducted by the All-Union Institute of Experimental Veterinary Medicine, the Government Scientific-Control Institute for Veterinary Preparations, and the Scientific Investigational Institute of Epidemiology and Hygiene of the Red Army, the following conclusions were adopted: (a) The vaccine is harmless to calves 4 to 12 months old; (b) immunity is firm in heifers and guinea pigs vaccinated and experimentally infected before breeding; (c) vaccinated animals do not transmit the disease to unvaccinated animals confined with them for fourteen months; (d) it is possible to vaccinate cows and heifers in the first four months of pregnancy without causing abortions. Such procedure is recommended only in infected herds; (e) it is possible to strengthen the constant properties

[improve the keeping qualities] of the vaccine by preparing it in dry form.

The conference recommended mass production of strain 19 vaccine, its wide use in calves 4 to 8 months old on infected farms, further experiments in vaccination of serum-negative adult cattle on infected farms, further research with strain 19 vaccine in sheep, and production of dry vaccine.

The formol-alum vaccine prepared from *Brucella suis*, and the semi-fluid formol vaccine for cattle and sheep, were deemed to be still in the experimental stage. Results to date are inconclusive and do not justify wide use. Further experimentation under controlled conditions was recommended.

Equine epizootic lymphangitis was the subject of a conference held on March 2, 1946. The principal address was delivered by Prof. D. L. Voronov of the Government Institute of Veterinary Dermatology, who reported that the condition is transmitted by blood-sucking insects. It was resolved that a comprehensive study of lymphangitis be undertaken, that an expedition be organized to study the disease in the affected areas, and that a conference of persons working with the disease be called.

Synestrol (synthetic estrogen) was the central topic of a conference held on Mar. 11, 1946. Following an address by Prof. A. A. Kudryavtzev, of the All-Union Institute for Experimental Veterinary Medicine, the following resolutions were passed: (1) that experiments in the treatment of sterility and endometritis by removal of placentas and mummified fetuses with synestrol, and results of treatment of agalactia with this product, justify recommendation for its use in veterinary practice; (2) that the director of the Institute should present the Supreme Veterinary Administration with a plan for instruction in the use of synestrol; (3) that the Ministry of Health of the U. S. S. R. be requested to permit synestrol production for veterinary use; (4) that the trust, Veterinary Supply Industry, be charged with the production and distribution of synestrol.—[Abstracts from *Veterinariya* 7, (July, 1946): 43-45.]

S/ROBERT E. HABEL.

### Chicken Embryo Newcastle Disease [Pneumoencephalitis] Vaccine

A method of cultivating the virus of Newcastle disease (pneumoencephalitis, avian pest, Doyle's disease, Ranikhet, or pseudo-fowl pest) was presented to the twenty-fourth annual congress of the Philippine Veterinary Medical



Association, Feb. 21, 1941. Delay in reporting it was caused by the war. Vaccine was prepared in 55 different ways, using numerous attenuating agents. More than 28,000 chickens and turkeys were successfully vaccinated in field trials.—[Ramon A. Acevedo and Isidro L. Mendoza: *Chicken Embryo Vaccine Against Newcastle Disease [Pneumoencephalitis]*. *Am. J. Vet. Res.*, 8, (Jan., 1947): 91-102.]

### Baby Pig Mortality

Pigs subjected to a 24-day fasting period lost 28 per cent of their initial weight, while those deprived of food for a 28-day period lost 30 per cent. Such fasting apparently gave rise to a temporary impairment of carbohydrate metabolism and to a decrease in body temperature. No pathologic changes in the chemical components of the blood were noted although physiologic changes did occur. No ketonemia occurred. Water was available *ad libitum*.—[Vera M. Hanawalt and Jesse Sampson: *Studies on Baby Pig Mortality. IV. Chemistry of the Blood During Fasting and Refeeding of Weanling Pigs*. *Am. J. Vet. Res.*, 8, (Jan., 1947): 73-81.]

### Salmonella Typhimurium Enteritis Fatal to Cattle

A group of heifers, recently transferred to a dairy barn, developed a persistent diarrhea, rapid loss of condition, and died in five to seven days. Two mature cows showed marked depression, anorexia, scouring, elevated temperature, accelerated pulse and respiration, and decreased milk flow. They died within two days of the appearance of symptoms.

*Salmonella typhimurium* was isolated, and some cows were found to be carriers without showing symptoms. Sulfathaladine stopped 1 early case, and no new cases appeared following use of an autogenous bacterin on all members of the herd.—[F. W. Schofield: *Salmonella Typhimurium. A Case of Acute Fatal Enteritis among Cattle*. *Canad. J. Comp. Med. and Vet. Sci.*, 10, (Oct., 1946): 271-273.]

### Chemotherapy of Calf Pneumonia

During 1942 to 1944, 95 clinical cases of calf pneumonia were treated. They were divided into four groups to receive sulfathiazole, sulfapyridine, sulfadiazine, or no treatment. The sulfonamide therapy decreased the mortality rate compared to the control group; the percentages were: sulfathiazole, 16; sulfadiazine, 20.8; sulfapyridine, 25; and untreated, 68.2. Sulfathiazole produced a quicker recovery, and calves so treated suffered fewer relapses than with sulfapyridine and sulfadiazine.

Values for urinary and fecal concentrations of excreted sulfonamides were determined on 26 patients. The chief toxic condition attributable to sulfonamide therapy was urinary blockage due to sulfonamide precipitation in the urinary system. Signs of toxicity were: inappetence, depression, frequent urination with straining, hematuria, restlessness, oliguria

leading to anuria; and with sulfathiazole, hyperesthesia and peripheral neuritis.

A maximum dosing schedule for the administration of sulfonamides in divided doses to calves up to 4 months of age would seem to be: sulfathiazole, 1.5 gr. / lb. for two to three days, followed by 1.0 gr. / lb. for two to three days; sulfapyridine, 1.0 gr. / lb. for one to two days, followed by 0.66 gr. / lb. for two to three days; sulfadiazine, 1.0 gr. / lb. for two to three days, followed by 0.66 gr. / lb. for two to five days. Briefer periods of therapy should be employed whenever the clinical response of the patient permits.—[L. Meyer Jones: *The Chemotherapy of Calf Pneumonia. II. The Use of Sulfathiazole, Sulfapyridine, and Sulfadiazine in the Treatment of Calf Pneumonia*. *Am. J. Vet. Res.*, 8, (Jan., 1947): 14-28.]

### Length of Gestation in Sheep

Rambouillet's had the longest gestation period (151.4 days), while Columbia's had the shortest (148.4 days) among 2,499 gestation periods studied at Dubois, Idaho. Age of the ewe was the most important non-hereditary source of variation (gestation being about one-fourth day longer for each year). Ewes bred early in the season tended to have slightly longer gestation periods than ewes bred late. Gestation periods of single lambs were slightly longer (0.6 day) than those of twin lambs, but weight of the ewe at breeding or sex of lamb had no significant effect.—[Clair E. Terrill and L. N. Hazel: *Length of Gestation in Range Sheep*. *Am. J. Vet. Res.*, 8, (Jan., 1947): 66-72.]

### Genesis of Streptococcic Bovine Mastitis

A herd consisting of about 60 Guernsey and 60 Holstein-Friesian cattle was maintained in two units under almost identical conditions on the same farm for seven years. Both units were fed and milked by the same men. Replacements were homegrown heifers.

The incidence and spread of mastitis were studied. Initial infection was 36.7 per cent in the Guernsey unit, 19.6 per cent in the Holstein-Friesian unit. Of both groups, about 90 per cent of the infection was due to *Streptococcus agalactiae*. The spread of infection was very slow and did not appear to be related to management practices, since the increases and decreases in incidence of mastitis in the two herds did not coincide.

It was observed that "the rise and fall of infection were related to the average age of the herd." It was also noted that "streptococcal infection began after the second year of milking life and increased regularly (within a straight band of 16%) to 66 per cent of quarters at the end of the sixth year of milking life."

Theories previously advanced to explain the incidence of mastitis are disposed of as follows:

Teat patency and obvious teat injury are "relieved of further major consideration" on the basis of work previously reported, which shows that obvious injury is more closely re-

lated to infection with streptococci other than *Str. agalactiae*, and that teat patency is correlated with staphylococcal infection in a constant age incidence but with *Str. agalactiae* infection in an "increasing with age" pattern.

Degree of exposure and prior sensitization "are rendered untenable by the observation that the age factor is a function of age."

Nonspecific mastitis as a primary or predisposing condition, following which *Str. agalactiae* causes chronic mastitis, "is noted to have been refuted by the later observations of its authors."

The hormone theory of Francis still "can be considered valid."—[James M. Murphy: *The Genesis of Bovine Udder Infection and Mastitis. II. The Occurrence of Streptococcal Infection in a Cow Population During a Seven-year Period and its Relationship to Age. Am. J. Vet. Res., 8, (Jan., 1947): 29-42.*]

### Panleucopenia in Cats

Examination of cats at intervals during the development of panleucopenia, at the height of the disease, and soon afterward revealed that the primary reactions occurred in the lymph nodes and lymphoid tissue of the ileum. These were soon followed by reactions in the intestinal mucosa. The liver, pancreas, and kidney responded late in the disease, and in them the resulting injury was sometimes greater than that found in the primary centers.

Changes in the lymph glands, the intestinal mucosa, and the bone marrow were carefully studied and are reported in detail.—[Wayne H. Riser: *The Histopathology of Panleucopenia (Agranulocytosis) in the Domestic Cat. Am. J. Vet. Res., 7, (Oct., 1946): 455-465.*]

### Avian Leucosis

The incidence of visceral lymphomatosis was apparently increased, by inoculation with cell-containing material from a lymphomatous field case, from an incidence of 9.6 per cent in controls to 38.8 per cent in inoculated birds. That visceral lymphomatosis was transmitted as a separate entity is indicated by the fact that it was the only type of leucosis which was increased in the inoculated birds. Females appeared to be more susceptible than males or slips.—[Olive Stull Davis and L. P. Doyle: *Studies in Avian Leucosis. I. The Transmissibility of Visceral Lymphomatosis. Am. J. Vet. Res., 8, (Jan., 1947): 103-112.*]

A method of performing liver biopsies is described. It was used to study the progress of leucosis in experimentally infected animals. It appears to have a limited use as a means of diagnosis, since many cases were observed which showed no abnormal lymphoid infiltration of the liver microscopically, the lesions being limited to other organs.

In these studies, fatal cases of visceral lymphomatosis developed very rapidly; in some cases, which showed definite liver lesions at postmortem examination, death occurred in three or four weeks after biopsy had showed the liver to be apparently free of an abnormal

amount of lymphoid infiltration.—[Olive Stull Davis and L. P. Doyle: *Studies in Avian Leucosis. II. The Use of Biopsy Technique in the Study of Visceral Lymphomatosis. Am. J. Vet. Res., 8, (Jan., 1947): 113-119.*]

## BOOKS AND REPORTS

### New Insecticide

Octa-Klor ( $C_{10}H_8Cl_8$ ) is a nearly odorless liquid reported to be helpful in the control of pests in the livestock and veterinary field. It was first reported in the *Journal of Economic Entomology* (December, 1945) as 1068, a product with a high order of toxicity to a wide range of insects but with a mild action on warm-blooded animals. The brown dog tick and other insects attacking man and domestic animals are susceptible to its action, it being ten times as effective as DDT in combating some of these.—[Octa-Klor, the Chlorinated Hydrocarbon Insect Toxicant. 35 pages. Julius Hyman and Co., Denver, Colo.]

### Insect Microbiology

The title and context of this book convey the fact that insects (including ticks) and the microbial life associated with them are identical subjects. It is a trek into the fields of the microbiologist and entomologist to make one science out of a biological relationship bent on doing harm—a science that was really started by the workers of the U. S. BAI who, in the early 1890's, caught a tick red-handed in spreading bovine piroplasmosis (tick fever). An excellent picture of Theobald Smith appears in the introduction. Here is a welcome book for veterinary science and a precious one, not so much because the suspicion that insects do transmit infection was brought to a climax by veterinary research workers but, more especially, because the problem of arthropod vectors is one of cumulative importance in veterinary medicine. In fact, farm animals are not as well protected against insects as the human being. In animal production, when insect meets microbe there is likely to be trouble. In view of these facts and the author's background, this book is a natural for the veterinarian.

Supposedly for literary convenience, as is customary with entomologists, insects and ticks are treated as a unit. The material is divided into 12 chapters, an introduction, and author and subject indexes. The introduction is a liberal education on the scope of the subject and the chapters represent material never before brought together as a single branch of learning, namely: extracellular bacteria and insects, specific bacteria associated with insects, intracellular Bacterium-like and Rickettsia-like symbiosis, rickettsiae, yeasts and insects, fungi and insects, viruses and insects, spirochetes associated with insects and ticks, protozoa and insects (except termites), protozoa and termites, immunity in insects, and methods and procedures.

There's but to glance at these combined titles (biological relationships in the author's terms) to be lured to the amazing amount of utilitarian facts condensed between the covers of this book. The encyclopedic character of the volume is disclosed in the 97 pages of references consulted in collecting the material.—[*Insect Microbiology*. By Edward A. Steinhaus, assistant professor of bacteriology and pathologist, Agricultural Experiment Station, University of California, formerly associate bacteriologist, U. S. Public Health Service. 763 pages. Illustrated. Comstock Publishing Company, Ithaca, N. Y. 1946. Price \$7.75.]

### Chemical and Technical Dictionary

Based upon the thesis that ignorance is not bliss in business, this dictionary lists about 50,000 definitions for use by professional people and laymen. This handy volume gives quick answers whenever questions arise regarding technical statements about chemical products. In addition to a compilation of thousands of trade-name or proprietary products, the dictionary outlines the general rules for pronunciation recommended by the Nomenclature, Spelling, and Pronunciation Committee of the American Chemical Society, with more than ten pages of examples. For most chemical compounds, the dictionary lists the chemical names, synonymous names, semi-structural formula, molecular weight, color, form and other physical properties, specific gravity, melting point, boiling point, solubilities, and uses.—[*Concise Chemical and Technical Dictionary*. Edited by H. Bennett, 1,055 pages. The Chemical Publishing Co., Inc., New York, N. Y. 1947. Price \$10.00.]

### The Etiology of Fowl Paralysis

Fowl paralysis, leucemia, and the allied manifestations of this condition begin as a hemocytoblastosis. This basic process can be initiated by bacteria, especially those of the Salmonella group, or by adverse atmospheric conditions, especially excessive concentration of birds and inadequate ventilation. In either instance, there is destruction of blood cells with a subsequent effort to replace them. The presence of degenerative cells and of the immature replacement cells in addition to the normal, mature cells constitutes hemocytoblastosis.

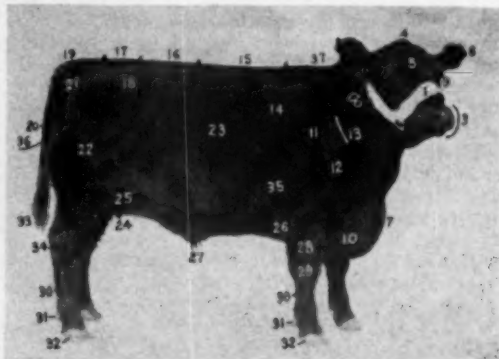
Under conditions of battery brooding, some commercial plants have such a concentration of birds that each hen may be limited to one cubic foot of air space. Under such unfavorable conditions, the birds are subject to respiratory disorders and anemia, and they fail to grow feathers or to gain weight at a normal rate. In such an establishment, hemocytoblastosis may be present in many or all birds, even those which are outwardly normal in appearance and actions.

The conclusion reached is that when chickens are raised on the ground they develop leucosis as a result of bacterial infection which follows intestinal parasitism, but that chick-

ens raised in battery brooders develop the same type of trouble as a result of adverse atmospheric conditions. In either event, breeding is an important factor in determining susceptibility. Chronic hemocytoblastosis is characterized by progressive emaciation, atrophy of the visceral organs, and an exhaustion of the hematopoietic tissues.—[W. W. Emmel: *The Etiology of Fowl Paralysis, Leukemia, and Allied Conditions in Animals*. XII. Relation of Atmospheric Conditions to the Development of This Group of Diseases Under Indoor-Battery Conditions. Technical Bulletin 425. Agricultural Experiment Station, Gainesville, Fla.]

### Selecting, Fitting, and Showing Beef Steers

While the text of this booklet concerns the 4-H clubs and breeders more than the veterinarian, it contains the exact occupational terminology of the steer's architecture, required to hold intelligible chats with important clients with all the confidence of a pundit. The jargon of the breeds, from the hackle of



—Florida Agric. Exp. Station

Breeders' terminology of the steer's architecture.

(1) Face; (2) nostril; (3) muzzle; (4) poll; (5) forehead; (6) neck; (7) dewlap; (8) ear; (9) eye; (10) brisket; (11) shoulder; (12) point of shoulder; (13) shoulder vein; (14) crops; (15) back; (16) loin; (17) loin end; (18) hooks; (19) tailhead; (20) tail; (21) rump; (22) thigh; (23) ribs; (24) cod; (25) hindflank; (26) foreflank; (27) pizzle; (28) arm; (29) knee; (30) shank; (31) dewclaw; (32) foot; (33) switch; (34) hock; (35) forerib; (36) twist; (37) top of shoulder.

the cock to the pizzle of the steer, makes up quite a vocabulary few of us live long enough to master. As of the steer's exterior, shown in the picture, that's but a fraction of the long catalogue including such terms as fill, gobby, muley, scurs, stretch, tie, twist, and a lot more which the author defines in alphabetical order. Selecting the right calves to build into show stock, nutrition, training and grooming, curling, show-ring technique, and an illustrated section on how to knot and fashion lead ropes, combine to make up a lot of carefully compiled information that's nice to know.—[*Selecting, Fitting, and Showing the Beef Steer*. Bulletin 421. By R. S. Glasscock, Ph.D., animal hus-



bandman, Agricultural Experiment Station, University of Florida, Gainesville. Paper. 37 pages. Illustrated. Official publication.]

### Caustic Soda

This elaborate text is designed for use by technical men, buyers, and persons who desire useful data on the characteristics, uses, forms, transportation, constants, etc., of caustic soda. The book is printed in three colors throughout, and contains many useful graphs, charts, and diagrams, as well as descriptive photographs.—[*Caustic Soda, Form A-100*. Pittsburgh Plate Glass Co., Columbia Chemical Division, Fifth Ave. at Bellefield, Pittsburgh 13, Pa.]

### How to Ship Dogs

One in a series of handy dog booklets, this one describes and illustrates errors which are commonly made in shipping dogs, and enumerates the items needed for shipping dogs successfully. There is a section on health examinations and requirements of the several states, another on the construction of a crate, still another on the provisions needed to supply feed and water while en route, and a final chapter on express rates, insurance, and losses that may be incurred. The booklet contains information which the veterinarian can pass along to clients who plan to ship dogs, and presents it in such a way that the veterinarian can save time which he may use to good advantage in another direction.—[*How to Ship Dogs*. By Capt. Will Judy. 16 pages. Paper. Fifth edition, 1947. Judy Publishing Co., Chicago. Price 30 cents.]

### Annual Review of Physiology

Once again, the American Physiological Society presents the important developments in a limited number of fields. Chapters prepared by 33 authors cover such subjects as growth, developmental physiology, reproduction, metabolic functions of the endocrine glands, the physiology of supporting tissue, muscle, exercise, the visceral functions of the nervous system, digestive system, kidney, peripheral circulation, heart, derivatives of blood plasma, blood gas transport, water metabolism, physiologic effects of heat and cold, the respiratory system, nerve and synaptic conduction, bioelectric potentials in the nervous system and in muscle, electrical activity of the brain, the somatic functions of the central nervous system, cutaneous sensation, experimental neurosis, permeability, physiologic aspects of genetics, defense mechanisms, and pharmacology.

As an example of the method used, two authors read and digested the material on defense mechanisms, which was published between 1942 and 1945, and they condensed it to 16 pages, exclusive of the bibliography of 217 references, under such headings as antibodies, antigens, blood groups, antibody-antigen reactions, complement and complement fixa-

tion, practical use of artificial immunity, and detoxification.

Contributions from Great Britain, New Zealand, Belgium, Denmark, and Switzerland are included, and it is promised that the next volume will include two reviews from Russia—hitherto not represented in the Annual Review of Physiology.

Any attempt to evaluate all of the work presented would be sheer presumption on our part. If we can convey an appreciation of the scope which this one book covers, our mission has been accomplished.—[*Annual Review of Physiology*. IX. Edited by V. E. Hall, J. M. Crimmon, and A. C. Giese, Stanford University. Cloth. 736 pages. Annual Reviews Inc., Stanford University P. O., Calif. 1947. Price \$6.00.]

### De Zoönosen

The diseases of animals transmissible to man are discussed in logical order in relation to cause, as by bacteria, by viruses, by spirochetes and protozoa, by animal parasites, etc. In addition to all of the well-known diseases of this nature, the author describes the less prominent ones, such as Aoki disease, which inhabitants of the island of Hondo, Japan, acquire from hares; louping ill of sheep; Rift valley fever; colital exanthema; and others.

The introductory note is a quotation from Topley and Wilson: "... the boundary between medical and veterinary science is becoming very indistinct, and this is as it should be." Throughout the text, the author introduces chapters with quotations from other authors, 25 in French, 20 in English, six in German, and four in Dutch. As examples, the foreword is introduced with "Man is his worst enemy in the spread of communicable diseases, but the lower animals are a close second," by T. G. Hull; the introduction by "There is but one medicine. If there are differences, they exist in the species attacked," by V. A. Moore; the chapter on brucellosis by "Accordingly it is plain that the relation between animal diseases and public health not only is intimately close, but also that the study of livestock problems and sciences dealing with them contribute in a surprising degree to public health and welfare," by J. R. Mohler.

The book is of good format, well written with large, clear type, well bound, and superbly illustrated. It is surprising that so monumental a work was published in Dutch, because Holland has only 700 veterinarians and a small number of physicians—most of whom read English. An English translation of this book would be a most welcome addition to the library of every practicing veterinarian.—[*De Zoönosen*. By J. van der Hoeden. 444 pages, 82 illustrations. H. E. Stenfert Kroese's Uitgevers-Mij N. V., Leiden. 1946. Price 10 gulden.]

C. HAASJES.

Well-nourished animals have ten times as much antibody (gamma globulin) as do protein-deficient animals.

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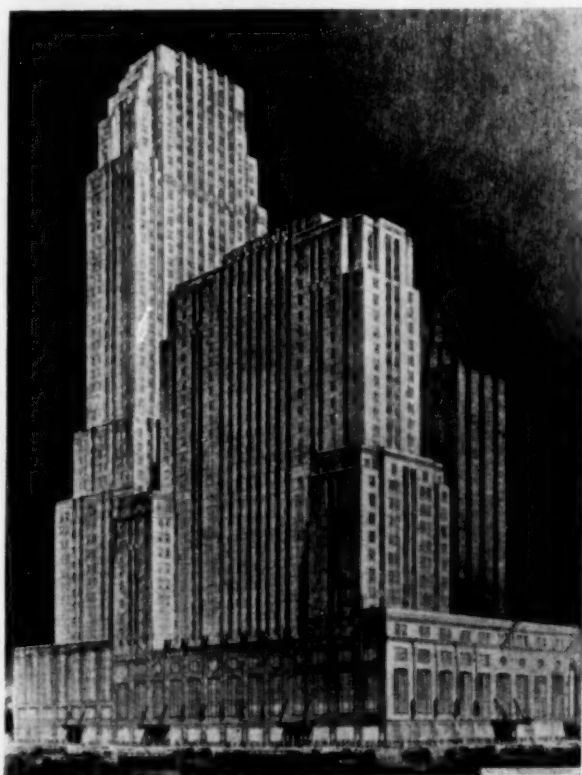
# THE NEWS

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## AVMA Convention Headquarters—Netherland Plaza

Dates—August 18-21, 1947

Place—Cincinnati



Netherland Plaza Hotel, Cincinnati

The Committee on Hotels and Housing urge that reservations for hotel accommodations be made at the earliest possible date, specifying all pertinent information (see p. xlv for hotel reservation blank).

A large attendance is expected and it will ease the burden of the Committee materially if reservations are made well in advance of the convention dates.

The Committee on Program is making satisfactory progress in assembling a group of speakers who will present recent findings on a wide variety of subjects; emphasis on the special problems encountered in veterinary medicine will receive attention also.

### Research Council Fellowship Committee Meets

The Fellowship Committee of the AVMA Research Council met at the Palmer House in Chicago on April 12, 1947, to consider applications for fellowships for the 1947-1948 school year. The three fellowships now in progress were all renewed for another year, namely: Dr. Howard W. Dunne (ISC'41), who is working at Michigan State College on swine enteritis; Dr. Dean S. Folse (TEX'45), who is working at the University of Minnesota on coccidiosis in turkeys; and Dr. Melvin J. Swenson (KSC'43), who is working at Iowa State College on nutrition and its effect on diseases of swine.

Other applicants were accorded favorable action, and these will be announced as soon as definite agreements of acceptance have been completed.

Council members attending the meeting were Dr. E. T. Hallman, Lansing, Mich., *chairman*; Dr. James Farquharson, Fort Collins, Colo.; Dr. Geo. H. Hart, Davis, Calif.; Dr. R. A. Kelsner, Philadelphia, Pa.; Dr. Carl F. Schlotthauer, Rochester, Minn.; and Dr. J. H. Whitlock, Ithaca, N. Y.; acting as secretary for Dr. H. H. Dukes.

The seventh bimonthly report on contributions to the Research Fund is published on p. 338 of this issue.

**Seventh Report on Contributions to AVMA Research Fund**  
**Geographical Breakdown as of April 10, 1947**

State	Total Veterinarians	Quota	No. of Contributions	Amount Contributed	% of Quota
Alabama	125	\$ 1,250	38	\$ 550.00	44.0
Arizona	42	420	15	205.00	48.8
Arkansas	59	590	13	136.17	23.2
California	1,044	10,440	372	6,920.50	66.2
Colorado	177	1,770	97	2,195.00	124.0
Connecticut	136	1,360	72	1,198.00	88.1
Delaware	32	320	8	95.00	30.0
District of Columbia	58	580	35	857.00	147.7
Florida	142	1,420	87	1,577.25	111.1
Georgia	147	1,470	44	670.00	45.5
Idaho	71	710	30	370.00	52.1
Illinois	1,224	12,240	211	4,385.30	35.8
Indiana	585	5,850	94	1,287.00	22.0
Iowa	865	8,650	297	6,110.31	70.6
Kansas	404	4,040	92	2,003.00	49.6
Kentucky	137	1,370	34	357.00	26.0
Louisiana	85	850	19	345.00	40.6
Maine	68	680	28	665.00	98.0
Maryland	165	1,650	54	1,060.00	64.2
Massachusetts	206	2,060	89	2,582.00	125.3
Michigan	550	5,500	138	2,418.00	43.9
Minnesota	403	4,030	116	2,069.50	51.3
Mississippi	99	990	19	250.00	25.2
Missouri	356	3,560	175	3,745.00	105.2
Montana	63	630	26	255.00	40.5
Nebraska	281	2,810	85	1,453.75	51.7
Nevada	27	270	9	115.00	42.6
New Hampshire	35	350	13	160.00	45.7
New Jersey	301	3,010	89	1,440.50	47.8
New Mexico	29	290	14	352.50	121.5
New York	980	9,800	414	7,549.00	77.0
North Carolina	135	1,350	56	720.00	53.3
North Dakota	73	730	15	305.00	41.8
Ohio	740	7,400	241	3,786.00	51.1
Oklahoma	110	1,100	60	815.00	74.1
Oregon	175	1,750	57	1,030.00	58.8
Pennsylvania	656	6,560	154	2,946.50	44.9
Rhode Island	25	250	19	755.00	302.0
South Carolina	80	800	22	335.00	41.9
South Dakota	118	1,180	25	466.00	39.5
Tennessee	93	930	37	502.50	54.0
Texas	421	4,210	105	1,335.75	31.7
Utah	45	450	27	290.00	64.4
Vermont	96	960	41	710.50	74.0
Virginia	130	1,300	54	840.00	64.6
Washington	226	2,260	80	1,211.00	53.6
West Virginia	65	650	10	115.00	17.7
Wisconsin	502	5,020	114	1,915.00	38.1
Wyoming	38	380	29	345.00	90.8
Hawaii	16	160	16	410.00	256.3
Canada	.....	.....	13†	645.25	....
Canal Zone	.....	.....	.....	120.00	....
Miscellaneous‡	.....	.....	3	45.00	....
<b>Totals</b>	<b>12,640</b>	<b>\$126,400</b>	<b>4,005</b>	<b>\$73,020.78</b>	<b>57.7*</b>

\*Based on average contribution of \$10.00 per veterinarian. However, the total amount contributed to date is 73.02 per cent of the original goal of \$100,000.

†Includes contribution of \$500 from Ontario Veterinary Association.

‡Includes 3 contributions from members in Alaska, Germany, and Korea.



## Annual Meeting, AAHA

The fourteenth annual meeting of the American Animal Hospital Association was held in Tulsa, Okla., April 22-24, 1947. In addition to a business session, technical exhibits, a ladies program, and a banquet, the meeting featured the following speakers.

Dr. O. A. Lopez Pacheco, Hato Rey, Puerto Rico: "Nephropepy in the Dog (Surgical Technique)."

Dr. L. J. Lacroix, Evanston, Ill.: "Management of Pseudocystitis and Pyometra."

Dr. Joseph DeVita, New Haven, Conn.: "Discussion of Endocrine Factors," and "Endocrinology."

Dr. Otto Stader, Ardmore, Pa.: "Fractures Involving Joints."

Dr. H. C. Stephenson, Ithaca, N. Y.: "Prognosis in Small Animal Medicine."

Dr. James Farquharson, Fort Collins, Colo.: "Surgical Treatment of Perineal Hernias," and "Surgical Removal of Submaxillary Cysts (movie)."

Dr. Wayne H. Riser, Evanston, Ill.: "Pathology of the Urinary Tract."

Dr. C. W. Bower, Topeka, Kan.: "Discussion of Treatment of Urinary Ailments."

Dr. C. F. Schlotthauer, Rochester, Minn.: "Mammary Tumors."

Dr. S. W. Haigler, St. Louis, Mo.: "Veterinary Internship."

Dr. Myron Thom, Pasadena, Calif.: "Radiotherapy in Canine Practice."

Dr. W. S. Gochenour, Indianapolis, Ind.: "Virus Diseases Other Than Distemper in the Dog."

Dr. C. P. Zepp, New York, N. Y.: "Treatment of Diseases of the Ear (Including Surgery) of the Dog and Cat."

Members of a panel discussion on "Establishing Values in the Sale of Animal Hospitals and Practices" were: Dr. J. V. Lacroix, moderator; Drs. C. P. Zepp, D. A. Eastman, S. R. Espy, and C. E. DeCamp.

A panel discussion on "Distemper Vaccination" was presented by Dr. E. B. Dibbel, moderator; Drs. G. Leroy Cheney, J. L. Ruble, A. R. Theobald, W. F. Irwin, E. C. Jones, and H. H. Groth.

## Council on Education Meets

The AVMA Council on Education met in an all-day session in Chicago on April 11, 1947. Routine business of the Council relating to reports by the inspection committee, revision of the essentials of an acceptable school of veterinary medicine, tabulation of information relative to foreign schools, and formulation of a report to be presented to the Executive Board and to the House of Representatives occupied the attention of the members present. These included: Dr. W. L. Boyd, St. Paul, Minn., chairman; Dr. James Farquharson, Fort Collins, Colo., secretary; Dr. W. A. Aitken, Merrill, Iowa; Dr. S. C. Dildine, Canal Winchester, Ohio; Dr. S. W. Haigler, St. Louis, Mo.; and Dr. W. A. Hagan, Ithaca, N. Y.

## Sales of Barbiturates

Instead of a federal law, placing the sale and possession of barbiturates under the Harrison Narcotic Act, the National Drug Trade Conference has drawn a model bill for the consideration of the state legislatures. The object is to meet the obligations of the pharmacy and drug industry and at the same time effect medical supervision of the sale of barbiturates to patients guilty of improper use.



First Lt. Gilbert J. Thompson, V. C., Linesville, Pa. (right), examines a German Shepherd in the clinic of the Dog Overseas Replacement Depot, Camp Kilmer, N. J. Before overseas movement, all dogs shipped to military and civilian personnel of the War Department at the expense of the owners are given a physical examination. The Dog Depot, the first in transportation corps history, is complete with barracks, mess hall, clinic, infirmary, and stockade. It is commanded by Major Walter A. Lawrence, V.C., who is owner of the Blue Cross Hospital, San Antonio, Texas.

## Paul Whiteman Heads National Dog Week

The National Dog Week (September 21 to 27), now in its twentieth year, will have as its general chairman Paul Whiteman, director of music for the ABC network, and a dog lover. Mr. Whiteman will be a guest at a dinner at the Hotel Pennsylvania on May 6, where 1,000 guests will pay tribute to Capt. Will Judy, founder of National Dog Week. Proceeds from the celebration will go to the organization's new research award program, details of which will be officially announced at the dinner.

Three new names have been added to this year's National Dog Week advisory committee: Dr. W. A. Hagan, president-elect of the AVMA; Mr. Gabriel Heatter, veteran radio commentator; and Dr. Thomas W. Craver, president of the American Animal Hospital Association.

## Veterinary Provisions of New Army Promotion Bill Are Objectionable

The promotion bill which the War Department has had under study and preparation for many months was finally submitted to Congress on March 13, 1947, in identical bills, S. 904 and HR-2536, respectively. Titled "The Officer Personnel Act of 1947," and hailed as being the solution to a controversy of several years' standing, the measure is so retrogressive in its veterinary aspects as to be entirely unsatisfactory for the future of the Army Veterinary Corps. Consequently, the AVMA addressed the following letter to Secretary of War Patterson asking that the legislation be suitably amended:

April 9, 1947

Hon. Robert P. Patterson  
Secretary of War  
The Pentagon  
Washington 25, D. C.

Dear Mr. Secretary:

There has come to the attention of the Board of Governors of the American Veterinary Medical Association the legislation introduced in Congress under the title, "Officer Personnel Act of 1947," and contained in the identical bills, S. 904 and HR-2536. Study of the proposed Act has convinced the Board that, if not corrected, the legislation will have serious, perhaps disastrous, effects upon the Veterinary Corps as a competent branch of the Army Medical Department.

Specifically, the objectionable features are:

- 1) The requirement that veterinarians enter the Army as second lieutenants and serve in that grade for one year prior to becoming eligible for promotion to first lieutenant.
- 2) The service credit for veterinary officers at initial appointment of only two years, as compared to three years for officers of the Dental Corps, Corps of Chaplains, and Judge Advocate General's Department, and four years for officers of the Medical Corps.
- 3) No provision for the grade of general officer for the Veterinary Corps.

(1) and (2) are related in that a service credit of three years, instead of two, for veterinary officers would correct the inequity of their being initially commissioned in the grade of second lieutenant. Veterinary officers have been commissioned as first lieutenants since 1935; to change this status now would be a definite stigma upon this branch of professional service. If the proposed legislation is not corrected in this respect, it can be predicted with certainty

that the Veterinary Corps will be unable to attract the better qualified veterinary graduates which it needs to maintain a high standard of service.

The value of incentive in procuring competent and outstanding officer personnel is well recognized. In the proposed Act, the Veterinary Corps will be a poor last in incentive as compared to other fields of veterinary endeavor. The expanding fields of opportunity now open to veterinary graduates are such that these men can choose between attractive careers in the U. S. Public Health Service, the federal Bureau of Animal Industry, state livestock disease control work, teaching and research, to mention only a few, and to say nothing of the need for, and considerable compensations of, private veterinary practice. Under such conditions, it seems entirely likely that the better qualified veterinary graduates would shun, rather than be attracted to, a career in the Veterinary Corps. The effect on the future continued improvement and competency of the Army veterinary service, which acquitted itself with real distinction and great benefit to the country during the past war, is obvious.

The third major shortcoming in the proposed Act, already noted, is the failure to provide rank in the Veterinary Corps higher than that of colonel. Every other major corps under The Surgeon General has at least one general officer. The Board of Governors is of the firm opinion that the work and varied responsibilities of the Director of the Veterinary Division, Surgeon General's Office, is such that it merits and justifies the grade of brigadier-general. The importance of appropriate rank for the responsible head of such a service, especially in dealing with other agencies and with the chiefs of veterinary military service in other countries, is well known to you. During the war, the then Director of the Veterinary Division was promoted to the grade of brigadier-general, and it is believed that the proposed bill should provide similarly.

Summarizing, the Board of Governors, acting in behalf of the American Veterinary Medical Association, expresses its grave concern over the objectionable provisions of the "Officer Personnel Act of 1947" and their probable bad effects upon the Veterinary Corps. The Board respectfully requests and urges that the Act be amended so as to:

- 1) Give veterinary officers service credit equal to three years upon being initially commissioned (as first lieutenants) in the Army Veterinary Corps.
- 2) Provide that the Veterinary Corps be authorized one general officer with the rank of

brigadier-general, who shall be an officer of the Veterinary Corps.

Sincerely yours,

AMERICAN VETERINARY MEDICAL  
ASSOCIATION

s/J. G. HARDENBERGH, *Executive Secretary.*

#### AVMA AND VETERINARY DEANS REQUEST HEARING

The AVMA, and the American Association of Veterinary Deans through its president, Dr. R. R. Dykstra, have requested that their representatives be given an opportunity to appear before the Senate and House Committees on Armed Services when hearings are held on the promotion bills. President-Elect W. A. Hagan and Executive Secretary J. G. Hardenbergh have been designated to represent the AVMA, and Dean Dykstra of Kansas State College and Dean H. D. Bergman of Iowa State College will represent the Association of American Veterinary Deans.

Also, letters have been sent to selected individuals in all states having Senators or Representatives on the respective Armed Services Committees; these letters have requested prompt action in an effort to obtain the desired amendments to S. 904 and HR-2536 while they are in committee.

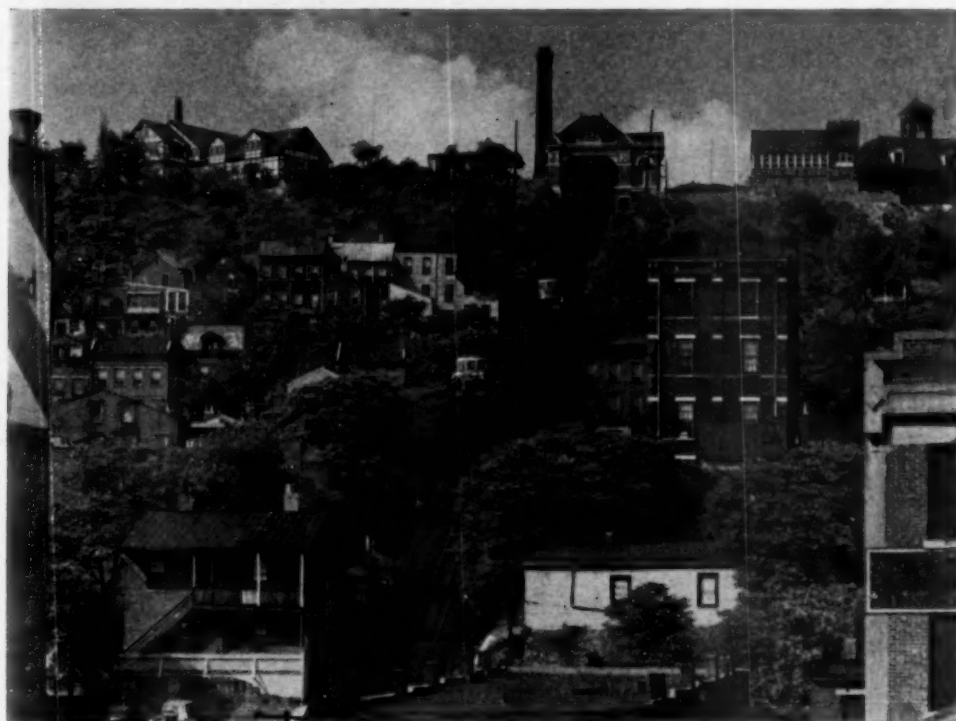
The objectionable features in the proposed legislation are contrary to expectations and previous assurances as to the entry and promotion status of veterinary officers. Proponents of the bill have claimed that the new promotion bill would, among other things, meet such desired objectives as to:

"a) Produce at all times an adequate number of officers of proper ages and grades to meet [the Army's] needs.

"b) *Provide a sufficiently attractive career so that men of high caliber will seek the Army as a career.*" (Italics ours.)

#### SPEECH BY CONGRESSMAN GILLIE

In a well-documented speech before the House of Representatives on April 2, Congressman (Dr.) George W. Gillie of Indiana called attention to the fallacy of the foregoing reasoning and predicted that, "unless the inducements offered veterinarians to make the Army a career are as good or better than at present, the type of individual that the Army wants in the Veterinary Corps will not be obtained." This viewpoint was agreed to by several of Congressman Gillie's colleagues in the House, who strongly supported his plea for proper recognition of veterinarians and a competent veterinary service for the Army.



Eden Park Incline, Cincinnati.



## Proposed Amendments to Constitution and Administrative By-Laws

At the 1946 meeting of the House of Representatives, action was deferred on one proposal which had been submitted at the 1945 business session. It had to do with integration of membership in the AVMA and its constituent associations. This proposal, plus two others which were submitted last year, will come up for final action at the Cincinnati session of the House; they are being published again for the information of delegates and other members, together with some additional proposals, and will be re-published in the May and June JOURNALS.

### PROPOSAL No. 1

[The purpose of this proposal is to integrate membership in constituent associations (state, provincial, territorial, and other veterinary associations affiliated with the AVMA) with AVMA membership. If this purpose is to be effected, several changes are necessary in the Constitution and Administrative By-Laws. The proposal submitted at the 1945 business session and considered at the 1946 meeting has been revised to meet objections and clarify questions raised last year in the House of Representatives (see the JOURNAL, October, 1946, pp. 310-313). The words in italics are the suggested revisions.]

Since the proposal as revised would affect the Constitution, it only can be submitted at the 1947 session and action taken one year thereafter.]

1) Amend Article III, Paragraph (b) of the Constitution to read:

*"General Membership.*—The general membership, otherwise known as the active membership, shall consist of (1) graduates of veterinary colleges approved by the Association who are members of their respective constituent associations and who have been duly elected in the manner hereinafter provided, and (2) associate members who have been duly elected as provided in paragraph (c) of this article; *provided, that the requirement of this paragraph with respect to membership in a constituent association shall not take effect until said constituent association shall have accepted the plan of integrated membership with the American Veterinary Medical Association by adopting the same qualifications for membership as prescribed in the by-laws and, provided further, that the requirement shall not then be retroactive but shall apply only to new applicants.*

*"c. Associate Membership.*—The associate membership shall consist of veterinarians duly elected in the manner provided by the by-laws who live in countries outside of the United States and the Dominion of Canada, and who are otherwise eligible but do not or could not hold membership in a constituent association."

Present paragraph (c) would become (d), and present paragraph (d) would become (e).

2) Amend Article IV, Section 1 of the Constitution to read:

"State, territorial, and provincial veterinary associations of North America, The National Association of Federal Veterinarians, and the official association of veterinarians of the United States Army which have or may hereafter become organized in conformity with the general plan of the American Veterinary Medical Association, and which have adopted the same qualifications for membership, shall be recognized upon application as constituent associations provided such application is approved by a majority vote of the Executive Board."

3) Amend Article X, Section 2(a) of the By-Laws as follows:

Drop the last sentence and replace with: "The application shall contain the certificate of the secretary of the constituent association that the applicant is a member in good standing of that body. *In the case of an application for associate membership, it shall contain the endorsement of two members who know the applicant, one or preferably both of whom shall live in the same country as the applicant.*

"The American Veterinary Medical Association reserves the right to reject the application of any member of any constituent association."

4) Add a new paragraph (b) to Section 3, Article X as follows:

"Members who have been dropped from constituent associations shall be dropped from the American Veterinary Medical Association on official notification by the secretary of the constituent association and shall be reinstated in the same manner. Whenever a member of this Association is dropped for any reason, the secretary of the constituent association in which he holds membership shall be notified promptly."

5) Replace Section 4 of Article X with the following:

*"Section 4.* The applications of candidates for associate membership shall be submitted to the Executive Board and shall be accepted or rejected by that body at any regular or special meeting. Associate members shall have all of the rights and privileges and be subjected to the same obligations as other active members except only that they are not required to maintain membership in a constituent association."

Present Section 4 would then become Section 5, and present Section 5 would become Section 6.

6) Amend Section 5 by making subparagraph (a) a part of re-numbered Section 5 and changing it to read as follows:

*"Junior members who have maintained good standing in their respective junior chapters for three years prior to graduation may apply for membership at time of graduation without payment of the membership fee of \$5.00, provided their applications are endorsed by two members of the Association, and provided further that their continued membership is contingent upon their joining a constituent association within one year after graduation."*

## PROPOSAL No. 2

[The purpose of this proposal is to clarify the method of appointment of councils and committees so that this may be done by the Executive Board or other governing bodies of the Association, if desired. This proposal, and Proposal No. 3 below, were submitted to the House of Representatives at the 1946 session and will be in order for final action at the 1947 meeting.]

Amend the first part of Article XII—"Committees—Standing and Special" so that it will read as follows:

## Article XII

## Councils and Committees

*Section 1.*—The councils and standing committees of the Association shall be those named below. Except as otherwise provided, the incoming president shall select and appoint the personnel of these councils and committees, in such numbers and for such terms as hereinafter specified. The selection of personnel for the ensuing year shall be made so that announcement of appointments and the rosters of councils and committees can be made in the proceedings (October) issue of the JOURNAL next following the annual meeting."

*Section 2.*—Special Committees: Transpose the present paragraph on special committees at the end of this article to this position.

*Section 3.*—This is to be the present second paragraph of *Section 1*, the first sentence of which is to be changed to read: "The annual report of the councils, standing and special committees," etc.

## PROPOSAL No. 3

If the foregoing proposal is adopted, then subparagraph (c) of *Section 3* of Article II should be amended to read:

"c) except as hereinafter provided, he shall appoint all regular and special committees and shall promptly fill vacancies in the membership of committees created by any cause;"

## PROPOSAL No. 4

[The purpose of this proposal is to include the Research Council and the Board of Trustees of the Research Fund in the organization set-up of the Association the same as are standing committees and the Council on Education. Since the proposed amendment is to the by-laws, and does not affect the corporate officers except to make some of them members of the Board of Trustees of the Research Fund, the publication of the proposal in this and two subsequent issues of the JOURNAL will permit final action to be taken at the 1947 meeting.]

Amend Article XII of the Administrative By-Laws by adding the following:

## 12. RESEARCH COUNCIL

"a) *Personnel.*—The Research Council shall consist of fifteen members representing the following fields: anatomy and histology; bacteriology (immunology and biologic therapy); biochemistry and animal nutrition; large animal medicine; large animal surgery; parasitology; pathology; physiology and pharma-

cology; poultry pathology; small animal medicine; small animal surgery; veterinary hygiene; virus diseases; x-ray; and a member-at-large. The members shall be appointed for three-year terms and the appointments so made that the terms of five members shall expire each year.

"b) *Method of Appointment.*—Appointments to the council shall be made by the Board of Governors and the executive secretary, subject to the approval of the Executive Board and confirmation by the House of Representatives.

"c) *Duties.*—The council shall develop plans and projects, based on the establishment of fellowships with any funds that may be provided, for the purpose of encouraging post-graduate study by veterinary graduates and developing more and better qualified veterinary investigators and faculty material. The council shall also serve as a board of review to pass upon all manuscripts submitted for publication in the American Journal of Veterinary Research.

"The Research Council shall select its own officers and formulate its own rules of procedure; it shall also adopt such regulations regarding fellowships and fellowship stipends as may be necessary and appropriate, subject to approval of these regulations by the Executive Board. It shall render a full report annually to the Executive Board and House of Representatives."

## 13. BOARD OF TRUSTEES—RESEARCH FUND

"a) *Personnel.*—The Board of Trustees of the Research Fund shall consist of the following officers of the Association: president, president-elect, chairman of the Executive Board; treasurer; and executive secretary. These trustees shall be named by their offices and be succeeded from time to time as their successors are elected.

"b) *Duties.*—The Board of Trustees shall establish and organize a trust fund for the purpose of encouraging graduate study by veterinary students; developing more well-qualified research workers and teachers in the field of veterinary science; stimulating interest in, and adequate financial support of, veterinary research problems; offering the services of the Research Council in the correlation of veterinary research; and for the benefit of the public generally in furthering science and research in science, and aiding and informing the public in the care and health of domestic animals and pet animals, including their relationship to human health.

"The Board shall administer all monies collected for the American Veterinary Medical Association Research Fund and perform all necessary duties in connection therewith. It shall render a full report annually to the Executive Board and House of Representatives."

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Dr. John R. Mohler received his appointment in the U. S. Bureau of Animal Industry in 1897, fifty years ago, and was assigned to Texas fever work in the South.

## APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.

### First Listing

#### ALFSON, GEORGE R.

Post Rd., S. Norwalk, Conn.

D.V.M., Cornell University, 1940.

Vouchers: C. E. Guthrie and G. S. Pickett.

#### ATKINS, ROBERT C.

317 N. Main, Galena, Ill.

D.V.M., Kansas State College, 1943.

Vouchers: L. T. Oberheim and R. L. Poppenhouse.

#### BACHTOLD G., MARTIN

Xochicalco No. 29, Col Narvarte, Mexico, D.F.

D.V.M., Escuela Nacional de Medicina Veterinaria, 1939.

Vouchers: F. Camargo N. and A. Tellez E.

#### BELDING, WILLIAM A.

3380 Cedar Rd., Lansing 15, Mich.

V.S., Ontario Veterinary College, 1911.

Vouchers: F. Thorp, Jr. and B. J. Killham.

#### BURRIS, KENNETH K.

507 N. Washington St., Greenfield, Ohio.

D.V.M., Ohio State University, 1931.

Vouchers: W. R. Krill and J. T. Burris.

#### CARCLAY, BASIL

17337 St. Marys, Detroit 19, Mich.

D.V.M., Michigan State College, 1938.

Vouchers: W. C. Young, Jr. and E. D. Wasko.

#### CHERRY, DONALD R.

1184 Wellington St., Ottawa, Ont., Can.

D.V.M., Ontario Veterinary College, 1945.

Vouchers: R. A. McIntosh and F. W. Schofield.

#### CLARK, THOMAS W.

Middletown, Md.

D.V.M., Michigan State College, 1941.

Vouchers: G. W. Green, Jr. and A. L. Brueckner.

#### CLASSICK, HAROLD J.

Belmond, Iowa.

D.V.M., Iowa State College, 1927.

Vouchers: M. W. Sloss and E. W. Benbrook.

#### COLE, EDWARD L.

40 Prospect St., Pawtucket, R. I.

V.M.D., University of Pennsylvania, 1933.

Vouchers: J. W. Armstrong and F. L. Briggs.

#### COOKE, GAYLORD K.

1932 Yosemite Rd., Berkeley, Calif.

D.V.M., Cornell University, 1918.

Vouchers: O. W. Schalm and W. H. Boynton.

#### CRUZ A., MARIANO

Avenida Simeon Canas No. 23 A, Guatemala City, Guatemala, C. A.

M.V., Escuela Nacional de Medicina, Veterinaria de Mexico, 1944.

Vouchers: J. G. Hardenbergh and R. C. Klusendorf.

#### DAWSON, JOHN C.

708 S. Olive St., Jefferson, Iowa.

D.V.M., Iowa State College, 1918.

Vouchers: J. A. Barger and J. G. Hardenbergh.

#### DERMODY, JOHN M.

Carroll, Iowa.

D.V.M., Iowa State College, 1936.

Vouchers: T. A. Dermody and M. N. Wardall.

#### ECHEGARAY-ECHEANDIA, RAFAEL

Box 93, Lares, P. R.

D.V.M., Michigan State College, 1946.

Vouchers: L. R. Barnes and J. A. Echeagaray.

#### ESTRADA, EMILIO

Avenida Bolivar 21-324, Guatemala City, Guatemala, C. A.

D.V.M., University of Montreal, 1944.

Vouchers: J. G. Hardenbergh and R. C. Klusendorf.

#### FRAZER, LLOYD A.

3901 70th St., Des Moines 10, Iowa.

D.V.M., Iowa State College, 1936.

Vouchers: B. T. Simms and J. A. Barger.

#### FRY, CHARLES R.

512 S. 18th St., Centerville, Iowa.

D.V.M., St. Joseph Veterinary College, 1917.

Vouchers: B. T. Simms and J. A. Barger.

#### GARMAN, RALPH A.

Tomah, Wis.

M.D.C., Chicago Veterinary College, 1909.

Vouchers: R. C. Klusendorf and V. F. Ziebell.

#### HAGAN, JEAN R.

159 Homer Ave., Cortland, N. Y.

D.V.M., Michigan State College, 1938.

Vouchers: C. I. Angstrom and E. V. Moore.

#### HARRISON, JOHN H.

Box 295, 17 Allen Rd., Edgewood, Md.

V.M.D., University of Pennsylvania, 1942.

Vouchers: G. C. Lightrop and R. W. Redding.

#### HOCH, CHARLES I.

R.D. 4, Naamans Rd., Wilmington, Dela.

V.M.D., University of Pennsylvania, 1917.

Vouchers: S. Ames and H. McDaniels, Jr.

#### KIPP, ELMER B.

918 Pitman Ave., Collingdale, Pa.

V.M.D., University of Pennsylvania, 1946.

Vouchers: W. J. Lentz and J. H. Mark.

#### KIRKPATRICK, ROBERT J.

1235 N. Henderson, Galesburg, Ill.

D.V.M., Iowa State College, 1943.

Vouchers: R. C. Glover and C. N. Bramer.

#### LUKENS, WILLIAM L.

211 W. Main St., Hillsboro, Ohio.

D.V.M., Ohio State University, 1938.

Vouchers: R. G. Kerans and A. G. Madden, Jr.

#### MCARDLE, DERMOD

720 Valencia St., San Francisco 10, Calif.

D.V.M., Chicago Veterinary College, 1920.

Vouchers: J. M. Arburua and J. McInnes.

#### MCCARTY, GAILLARD T.

14437 Michigan Ave., Dearborn, Mich.

D.V.M., Michigan State College, 1943.

Vouchers: L. V. Jones and C. E. Turnbull.

#### MARTINEZ M., FERNANDO

Apartado Postal No. 30, Atlitico, Pue., Mexico.

D.V.M., Escuela Nacional de Medicina Veterinaria, 1945.

Vouchers: F. Camargo N. and J. G. Hardenbergh.

#### MEYERS, BERNARD C.

8 Cortland St., Norwalk, Ohio.

D.V.M., Cincinnati Veterinary College, 1920.

Vouchers: F. A. Zimmer and C. W. Cromley.

#### MOELLER, JOSEPH G.

6049 Colter Ave., Cincinnati 30, Ohio.

D.V.M., Ohio State University, 1920.



Vouchers: A. G. Madden, Jr., and P. B. Johnston.

**NORBERTO-MACEDO, JOSE**

Instituto de Biologia Animal, Avenida Maracana 222, Rio de Janeiro, Brazil, S. A.

D.V.M., Escola de Medicina Veterinaria de S. Paulo, 1934.

Vouchers: S. Torres and F. Camargo.

**ORTEZ M., ROMERO**

Criaden Miliker de Ganado No. 2, Hda. Sta. Gertrudis, Chilmalma, Chile.

D.V.M., Escuela Nacional de Medicina Veterinaria, 1941.

Vouchers: F. Camargo N. and A. Tellez E.

**REDMAN, WARD D.**

Box 233, Burlington, Iowa.

D.V.M., Kansas State College, 1937.

Vouchers: B. T. Simms and J. A. Barger.

**RETOS, GEORGE**

R. D. No. 1, Monongahela, Pa.

V.M.D., University of Pennsylvania, 1946.

Vouchers: F. E. Lentz and H. M. Hershman.

**RODAS C., FRANCISCO R.**

5a. Avenida Norte No. 9 Jocotenango, Guatemala City, Guatemala, C. A.

M.V., Universidad de Mexico, 1944.

Vouchers: J. G. Hardenbergh and R. C. Klusendorf.

**ROTHBOCK, TODD P.**

Peterson, Iowa.

D.V.M., Iowa State College, 1934.

Vouchers: B. T. Simms and J. A. Barger.

**RUSHTON, FRANK**

882 Runnymede Rd., Toronto, Ont., Can.

D.V.M., Ontario Veterinary College, 1936.

Vouchers: G. A. Edge and F. W. Schofield.

**SUTTON, KARL L.**

201 North St., Morenci, Mich.

D.V.M., Michigan State College, 1936.

Vouchers: E. C. W. Schubel and J. C. Schwabland.

**VILLENEUVE, J. PAUL**

2018 Jeanne-Mance St., No. 4, Montreal 18, Que., Can.

D.V.M., University of Montreal, 1938.

Vouchers: J. F. Frank and A. V. Durrell.

## Second Listing

Alexander, Marvin, 1921 Bay Rd., Miami Beach 39, Fla.

Correa, Outurbino, Rua Jose do Patrocinio no 324, Porto Algere, Rio Grande do Sul, Brazil.

Powley, Frederick J., 613 Dominion Public Bldg., Winnipeg, Manitoba, Can.

Rattray, Alexander J., 10149 Clifton Pl., Edmonton, Alberta, Can.

Sanders, Albert, Jr., Stephenson, Mich.

Steel, James D., Faculty of Veterinary Science, University of Sydney, N.S.W., Australia.

Sweatman, John C., Library St., Roxbury, New York.

## 1947 Graduate Applicants

### First Listing

The following are graduates who have recently received veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-

Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (\*) after the name of a school indicates that all of this year's graduates have made application for membership.

## Michigan State College

BORGMAN, ROBERT F., D.V.M.

252 Seaside Ave., Bridgeport, Conn.

Vouchers: W. Giltner and C. S. Bryan.

## Ohio State University

All of the following applicants have been vouched for by Drs. W. F. Guard and C. R. Cole.

ALBERS, EARL J., D.V.M.

2042 Gartside Ave., Murphysboro, Ill.

AMLING, WARREN E., D.V.M.

1927 Indianola Ave., Columbus, Ohio.

BAILEY, JAMES P., D.V.M.

Leatherwood Farms, Bluefield, Va.

BATCHELOR, ROBERT F., D.V.M.

Fort Wayne Rd., U. S. 24, Defiance, Ohio.

COLE, JOHN H., D.V.M.

Rt. No. 2, Delaware, Ohio.

DENHART, PAUL, D.V.M.

221 Third St., Findlay, Ohio.

EICHORN, ELMER, D.V.M.

Clarington, Ohio.

FLORA, DAVID L., D.V.M.

Chalmers, Ind.

GOROWAY, A. L., D.V.M.

R.F.D. No. 3, Freehold, N. J.

HACKETT, WILLIAM C., D.V.M.

South Charleston, Ohio.

HALL, RICHARD L., D.V.M.

75 S. Chappel St., Gowanda, N. Y.

HANNAN, EDWARD C., D.V.M.

Maple Park, Ill.

HILL, EDWIN L., D.V.M.

310 Fifth St., Aurora, Ind.

HOUSEHOLDER, ROBERT T., D.V.M.

13410 Second Ave., East Cleveland, Ohio.

LIGHT, RICHARD, D.V.M.

New Madison, Ohio.

LYDAY, JAMES M., D.V.M.

65 S. Westmoor Ave., Columbus 4, Ohio.

METZGER, FREDERICK K., D.V.M.

New Market, Ind.

MEYER, ROMAN L., D.V.M.

Brunswick, Ohio.

MONTGOMERY, L. ROBERT, D.V.M.

Casselton, N. Dak.

NEIKIRK, GEORGE W., D.V.M.

N. Sandusky St., Bucyrus, Ohio.

NOYES, LOREN M., D.V.M.

La Center, Ky.

RANCK, MERRILL, D.V.M.

297 E. Beaumont Rd., Columbus, Ohio.

MONTANEZ-RIVERA, LUIS A., D.V.M.

Box 1891, San Juan, P. R.

ROMIG, PAUL L., D.V.M.

74 W. Bowery St., Akron, Ohio.

SCHMITTLE, SAMUEL C., D.V.M.  
2117 Indiana Ave., Columbus, Ohio.  
SHARP, WAYNE  
321 W. Spring St., Lima, Ohio.  
SHIPMAN, NEIL T., D.V.M.  
34 W. Market St., Tiffin, Ohio.  
WARE, ROY M., D.V.M.  
Rt. No. 5, Sidney, Ohio.  
ZAKRZEWSKI, KAZIMIERZ, D.V.M.  
17 St. Marks Pl., New York, N. Y.

### University of Pennsylvania

SCOTT, RALPH T., V.M.D.  
111 Highland Dr., Kenwood, Chevy Chase, Md.  
Vouchers: T. DeMott and H. A. Locke.

### Second Listing

#### Alabama Polytechnic Institute

Alston, William R., D.V.M., Linden, Ala.  
Bateman, Osgood M., D.V.M., Sandersville, Ga.  
Beasley, Hugh C., D.V.M., Dixie, Ga.  
Broussard, John R. Jr., D.V.M., Box 125, Porter-  
dale, Ga.  
Bryant, John E., D.V.M., R.R. 1, Box 380, Davis  
Rd., Lake Worth, Fla.  
Clark, William B. Jr., D.V.M., Box 668, Wilson,  
N. Car.  
Davis, Harold C., D.V.M., Sylvester, Ga.  
DeMoss, William R., D.V.M., Jackson Animal  
Hospital, Meadow Brook Rd., Jackson, Miss.  
Galyon, Orville E., D.V.M., Sweetwater, Tenn.  
Gandy, Ralph E. Jr., D.V.M., Darlington, S. Car.  
Gentry, Robert I., D.V.M., 4700 Tennessee Ave.,  
Chattanooga, Tenn.  
Humphreys, Lewis G., D.V.M., 305 East Brow  
Rd., Lookout Mountain, Tenn.  
Kinard, Henry B. Jr., D.V.M., Ninety-Six, S. Car.  
Krauss, Richard E., D.V.M., 1036 Hollywood Pl.,  
West Palm Beach, Fla.  
Lauderdale, Byron N. Jr., D.V.M., 1115 Madison  
Ave., Montgomery, Ala.  
Little, John D., D.V.M., Monroe, Tenn.  
Long, Forrest B., D.V.M., General Delivery,  
Charlotte, N. Car.  
McKee, George O. Jr., D.V.M., 521 Lamar Ave.,  
Selma, Ala.  
Madill, James W., D.V.M., 503 Ozule St., Tampa  
6, Fla.  
Needham, Jasper N. Jr., D.V.M., R.F.D. 2,  
Box 59, Wilmington, N. Car.  
Phifer, Joseph T., D.V.M., 1617-11th St., Tusca-  
loosa, Ala.  
Reaux, Harold A., D.V.M., Rt. 1, Box 134 C.,  
New Iberia, La.  
Rumbley, Hector M. Jr., D.V.M., Monroeville,  
Ala.  
Shore, Tom T., D.V.M., Baldwin, Ga.  
Simpson, David A., D.V.M., 6709 Division Ave.,  
Birmingham, Ala.  
Williams, Joseph W., D.V.M., Luverne, Ala.  
Vaughn, James F., D.V.M., 320 North 4th St.,  
Paducah, Ky.  
Young, Raymond J., D.V.M., 119½ Cox St.,  
Auburn, Ala.

### University of Pennsylvania

Aucker, Ralph S., V.M.D., Port Trevorton, Pa.

Cavanaugh, Francis J., V.M.D., 808 West Broad  
St., Quakertown, Pa.  
Chardon, Humberto Z., V.M.D., P. O. Box 843,  
Ponce, P. R.  
Church, John R., V.M.D., 21 E. Levering Mill  
Rd., Bala-Cynwyd, Pa.  
Corkhill, de Paul J., V.M.D., 1151 N. 19th St.,  
Allentown, Pa.  
Dailey, Hugh F., V.M.D., 24 Glen Ave., Newton  
Center, Mass.  
DeCoudres, William H., V.M.D., R. D. 4, Mead-  
ville, Pa.  
Denlinger, Everett E., V.M.D., Paradise, Pa.  
Ferrigno, Frank F., V.M.D., 358 Jackson St.,  
Willimantic, Conn.  
Fessenden, Paul E., V.M.D., Main St., Brook-  
line, N. H.  
Fuss, Robert W., V.M.D., 1571 Undercliff Ave.,  
New York 53, N. Y.  
Groveman, Mervin D., V.M.D., 140 Farnsworth  
Ave., Bordentown, N. J.  
Gundlach, Charles E., V.M.D., 421 Wilson Ave.,  
Washington, Pa.  
Kornblatt, Lloyd B., V.M.D., 37 Highland Ave.,  
Metuchen, N. J.  
Lawhon, Glenn J. Jr., V.M.D., Animal Hospital,  
Hartsville, S. Car.  
Lebeda, Joseph M., V.M.D., 191 Clinton Rd., West  
Caldwell, N. J.  
Lorentzen, Kay W., V.M.D., 2865 Jackson St.,  
San Francisco 15, Calif.  
McManus, Norbert R., V.M.D., Box 179, R.F.D. 1,  
Old Kings Rd., Catskill, N. Y.  
MacKenzie, Roland S., V.M.D., 225 Greenwood  
Ave., Jenkintown, Pa.  
Markle, Howard E., V.M.D., R. D., West New-  
ton, Pa.  
Miller, Robert L., V.M.D., 450 Norman Ave.,  
Arcadia, Calif.  
Monahan, Robert R., V.M.D., 15 Eden St., Fram-  
ingham, Mass.  
Nelson, Russell A., V.M.D., Box 201, Oakdale,  
Calif.  
Pastor, Theodore J., V.M.D., 5456 Park Ave.,  
Bridgeport, Conn.  
Rubio, Dorian L., V.M.D., P. O. Box 224, Ponce,  
P. R.  
Spalding, Robert S., V.M.D., 608 S. 13th St.,  
San Jose, Calif.  
Steinmetz, Adolf, V.M.D., Towerhill Farms, Dun-  
lop Rd., Huntington, Long Island, N. Y.

## U. S. GOVERNMENT

**Violation of Virus-Serum Law Brings Federal Action.**—For violation of the federal virus-serum-toxin act, the Aurora Serum Company and Logan B. Huff of Aurora, Ill., have been fined on four counts in the United States District Court in Chicago. Violations of the law, aimed at maintaining a high quality of veterinary biological products, have been rare in recent years.

Evidence in the case was gathered by U. S. BAI inspectors. The defendants were charged with interstate shipments of hog-cholera virus which violated the law in these respects: It

was worthless within the meaning of the virus-serum-toxin act; it had not been prepared under U. S. veterinary license in compliance with the regulations prescribed by the Secretary of Agriculture; and it was falsely labeled. Officials of the BAI cite the law and the federal action taken under it as means by which the government protects livestock owners from worthless or undependable biological products intended for the treatment of domestic animals.

**Harrison Narcotic Act.**—Commissioner Harry J. Anslinger is advocating that Congress amend the narcotic laws so as to bar all of the narcotics now sanctioned except codeine preparations containing less than 1 gr. per ounce. One of the aims is to eliminate paragon from the drug trade uncontrolled.

### Veterinary Personnel Changes in the Bureau of Animal Industry

#### TRANSFERS

Mark R. Boyer, from Danville, Ill., to Peoria, Ill.  
James H. Hogan, from Sacramento, Calif., to San Francisco, Calif.  
Sydney M. Kessler, from New York, N. Y., to Albany, N. Y.  
W. Wayne Miller, from Chicago, Ill., to Washington, D. C.  
Carroll K. Mingle, from Beltsville, Md., to Washington, D. C.  
William T. Shalkop, from Boston, Mass., to Albany, N. Y.  
Bryant G. Waterbury, from Philadelphia, Pa., to Omaha, Neb.

#### RESIGNED

Martin E. Anderson, San Francisco, Calif.  
Delbert R. Cook, Los Angeles, Calif.

#### RETIRED

Arthur N. Smith, Muncie, Ind.  
Clarence T. Snyder, St. Louis, Mo.

#### DIED

Clarence E. Redden, St. Paul, Minn.

**African Cattle Louse Discovered in the South.**—Entomologists of the USDA have discovered, in Florida cattle, heavy infestations of lice previously known to occur only in the vicinity of Kameruns, West Africa. First reported in Florida in 1945, it has more recently been found in Texas. This species infests the brush of the tail but saps the vitality of the cattle so rapidly that some animals become too feeble to walk.

Entomologists have found that sprays containing 1.5 per cent DDT in a wettable powder will free the cattle of this parasite. Although the tail is mainly infested, the entire animal should be sprayed. One and one-half to 2 pints of solution per animal is sufficient.

**Report on Biological Products.**—The U. S. Bureau of Animal Industry has issued a report on the activities of licensed establishments, supervised by the virus-serum control division,

in the production and destruction of biological products during 1946. For the month of January, 1947, a total of 111,670,264 cc. of hog cholera antiserum was completed and 21,466,564 cc. of hog-cholera virus produced. Exclusive of these products, licensed plants produced, during 1946, 2,844,000 cc. of antitoxins, 7,112,000 cc. of aggressins, 327,000 cc. of diagnostics, 1,792,000 cc. of toxoids, 63,390,000 cc. of vaccines and viruses, 209,079,000 cc. of bacterins, 90,843,000 cc. of mixed bacterins, and 99,177,000 cc. of serums (including 33,871,000 cc. of swine erysipelas antiserum, 21,258,000 cc. of hemorrhagic septicemia antiserum, and 16,916,000 cc. of canine distemper antiserum).

## AMONG THE STATES AND PROVINCES

### Arizona

**ANLA Golden Anniversary.**—Nearly 1,500 prominent stockmen attended the golden anniversary of the American National Livestock Association at Phoenix in January. The enforcement of stringent measures against the Mexican outbreak of foot-and-mouth disease was one of the important preoccupations of the sessions. Said President Wm. B. Wright, "The U. S.—Mexican border must be patrolled as if it were a prison camp."

### Arkansas

**Strong Farmer Organization.**—Never have movements to form stronger farm organizations been greater than now. The farm bureau is determined "to go over the top" by enlarging its membership and backing programs beneficial to agricultural production and marketing through closer cooperation with the Livestock Sanitary Board in the controlling of insect pests and major plagues (tuberculosis, anthrax, brucellosis). Besides public service corporations, chambers of commerce and civic organizations are driving to increase the number of competent veterinarians. Banks consider livestock better than land as security for short term loans, but incompetent supervision of their health is often a deterrent.

S/FRANK HURLBUT, Yellville.

### California

**Base Pay for Milkers.**—It is rumored in the Los Angeles milkshed that milkers are about to demand a base pay of \$300 a month, and a higher bonus. It is said that some dairymen have cut wages and terminated their contract with the union.—*Western Dairy Journal*.

**Inspections to Be Tougher.**—According to the report of a recent meeting of the Los Angeles County Health Department, veterinary inspectors are to be instructed to enforce regulations more rigidly than was thought expedient during the war. Says the *Western Dairy Journal* of January 4, "The easy days of the war are over and there is no need any more to pass over minor infractions with one eye



shut." Similar instructions were passed out to all parts of the state.

**Los Angeles County Livestock Production.**—A condensed report from the livestock sanitary service of Los Angeles County shows the total value of the animals produced in 1946 to be \$110,132,724.75, broken down as follows:

Sheep and wool.....	\$ 290,450
Goats .....	1,743,300
Hogs .....	2,850,380
Fur-bearers .....	880,950
Chickens .....	27,702,750
Turkeys .....	2,394,000
Ducks .....	156,250
Rabbits .....	9,620,362
Horses .....	1,479,125
Cattle .....	61,357,677
Total poultry .....	30,253,000

Grand total ..... 110,132,724

The dairy cattle valued at \$58,267,437 produced \$57,284,937 worth of milk and butterfat. In 1945, Los Angeles County farmers sold \$111,852,000 worth of plant crops.

**California Needs Veterinarians.**—On May 31, 1947, the State Personnel Board will hold a nation-wide state civil service examination for the position of veterinary meat inspector (monthly salary, \$280 to \$340). The examination will be given in localities in various states as the number of applicants permit. Veterans will receive 10 points' preference credit, disabled veterans, 15 points. It is possible to transfer to livestock disease control work after obtaining a license as veterinary meat inspector. Inquiries and applications must be postmarked before midnight, May 10, 1947. Send requests to State Personnel Board, c/o Veterans' Personnel Section, 1015 L Street, Sacramento, Calif.

**Dr. Hart Honored.**—Dr. George H. Hart, head of the Division of Animal Husbandry, University of California, Davis, was appointed a member of the Livestock Advisory Committee by Secretary of Agriculture Clinton P. Anderson. The functions of the committee include the development of a research program under the Research and Marketing Act passed by Congress in April, 1946.

**Hasten Plans for Veterinary School.**—"President Bob Sproul plans to call for bids in the future for the \$5 million building and equipment for the new school of veterinary medicine which will be located on the Davis campus." The shortage of veterinarians, strikingly outlined in the shadows of foot-and-mouth disease, is cited by the *Western Livestock Journal* as a reason for prompt construction, notwithstanding the high cost.

**Soapsuds—Famous Horse.**—Soapsuds, 26, favorite mount of the late Will Rogers, is living a life of sweet retirement at the Will Rogers' State Park (quoting Chief Ranger Eugene Velzy) "with all his teeth and even developing a tricky disposition. We have to treat him like a colt." Soapsuds, like Man o' War in Kentucky, has a pasture, corral, and

stable of his own, and is a cynosure of many eyes. Mabel I. Savage, in *Our Dumb Animals* (March, 1947), classifies Soapsuds as the most popular horse in sunny California.

## Colorado

**Colorado's First Cattle.**—The first cattle of Colorado were foot-sore oxen turned loose by wagon-train bosses at the junction of Cherry Creek and the Platte River in the fall of 1858, according to Harry H. Smith, Colorado A. & M. College. Without hay there was little hope the oxen would survive the winter. While hunting buffalo near Bijou Creek the following spring, these men found their cattle fatter than when turned out in the fall.

Four years later (1862), Colorado's first fat cattle were in Denver at a live-weight price of 5 1/2 cents a pound.

## Florida



Luncheon gathering of retired veterinarians and their wives at the Traveler's Inn, Bradenton, Fla., March 6, 1947.

They are (front row, left to right)—Mrs. H. H. Fairbank, Mrs. O. B. Hess, Mrs. Wm. Hansen, Mrs. H. L. Little, Mrs. W. H. Ferguson, Mrs. L. A. Ruff, Mrs. J. H. Lenfesty, Mrs. J. W. Odgers, Dr. R. E. Brookbank, and Mrs. John R. Mohler.

(Back row, left to right)—Dr. H. H. Fairbank, Dr. L. A. Ruff, Dr. O. B. Hess, Dr. Wm. Hansen, Dr. H. L. Little, Dr. J. H. Lenfesty, Dr. W. H. Ferguson, Dr. W. F. Biles, Dr. J. W. Odgers, Mrs. R. E. Brookbank, Dr. John R. Mohler, and Mrs. W. F. Biles.

## Illinois

**Secretary Resigns.**—Dr. W. D. Daugherty of Sterling, secretary-treasurer of the Illinois State Veterinary Medical Association, has resigned his position due to ill health. He is retiring from active practice and plans to leave Illinois.

During the time that Dr. Daugherty has served as secretary-treasurer, the Illinois Association has set new records in attendance and membership. The annual meeting in January was attended by 360 veterinarians, and 105 new applications for membership were received. The Association recognizes the contributions made by Dr. Daugherty in the discharge of his duties and expresses deep appreciation for the services he has rendered in office.

S/A. G. MISENER, Secretary.

**Humane Work.**—Humane work among animals stems to a large extent from the operations of the Anti-Cruelty Society of Chicago

where its managing director, Dr. W. A. Young, who is also chairman of the National Livestock Loss Prevention Board, holds forth. During the first quarter of 1947, the Society answered 6,647 calls to collect animals in distress. New homes were found for 267 dogs and 38 cats, and 60 dogs, 2 cats, and 1 sheep were returned to their rightful owners.

**Mastitis Program Expands.**—The period of milk shortage continues, and dairymen are urged to follow through on the herd program for bovine mastitis control. At present, 96 practicing veterinarians in 55 counties are working with the Agricultural Extension Service in the program, but "it will require the cooperation of 300 practitioners to do this job," says Dr. H. S. Bryan of the University of Illinois College of Veterinary Medicine.

**Chicago Association.**—The March 11 meeting of the Chicago Veterinary Medical Association featured Dr. R. L. Rudy, The Ohio State University, Columbus, who discussed "Penicillin in Small Animal Practice." Emphasis was placed upon rate of absorption, optimum dosage, rate of excretion, and frequency of injection.

On April 8, the Association met at the Palmer House to hear Dr. E. M. K. Gelling, professor of pharmacology, University of Chicago, discuss "A Whaling Expedition," illustrated by motion pictures. The wives in the newly organized auxiliary enjoyed bridge during the meeting.

s/ROBERT C. GLOVER, *Secretary.*

## Iowa

**Cedar Valley Association.**—Forty-four veterinarians attended the dinner meeting of the Cedar Valley Veterinary Association in Waterloo on March 10. Dr. C. D. Lee, Iowa State College, Ames, headed the scientific program, and Dr. Paul V. Neuzil, Blairstown, led a discussion on "Baby Chick Diseases and Newcastle Disease." The Association voted to sponsor a practitioners' clinic to be held this summer in Waterloo.

**East Central Society.**—The East Central Iowa Veterinary Medical Society met in Cedar Rapids on March 13, with mayors and councilmen as special guests. Dr. I. A. Merchant, Department of Veterinary Hygiene, Iowa State College, Ames, spoke on "Health Problems of Municipal Authorities." Dr. F. E. Brutsman, mayor of Traer, spoke on the fly eradication program in his town. Dr. James D. Ramsey, Tipton, discussed the subject "Do Iowa's Returned GI's Appreciate the Army Veterinarians' Super Job of Food Inspection? Do the GI's Demand Competent Veterinary Meat and Milk Inspection for Their Home Communities?"

Other speakers were Dr. Robert W. Finch, Marengo, who led the discussion of Dr. Ramsey's paper; Dr. H. E. Hanna, Springville, speaking on his work with the K-9 Corps and rat control campaigns; Dr. A. R. Menary, Cedar Rapids dairy and meat inspector, who outlined the work under the model ordinance of his city; and Dr. H. A. Bell, Davenport

meat inspector, who told of experiences as meat inspector for his municipality.

s/ORLO L. HAIGHT, *Secretary.*

**Southwestern Association.**—The spring meeting of the Southwestern Iowa Veterinary Medical Association was held at the Hotel Chieftain, Council Bluffs, on April 1. The technical program consisted of the following speakers.

Dr. L. M. Hutchings, Purdue University, Lafayette, Ind.: "Death Losses in Newborn Pigs."

Dr. J. D. Ray, Corn States Serum Co., Omaha, Neb.: "Swine Diseases."

Dr. Jack M. Jones, Milford: "Conducting a Mixed Veterinary Practice."

Dr. J. E. Peterman, U. S. BAI, Lincoln, Neb.: "Vesicular Diseases of Animals."

Dr. A. B. Quin of Jensen-Salisbury Laboratories, Kansas City, Mo., led a panel discussion.

Regulatory officials, Dr. C. C. Franks, state veterinarian, and Dr. J. A. Barger, U. S. BAI, both of Des Moines, addressed the Association.

s/M. R. BEEMER, *Secretary.*

## Kansas

**Fact-Finding Poultry Conference.**—The widely heralded conference of the Institute of American Poultry Industries organized under the presidency of Dr. Cliff D. Carpenter and Mr. Mark Goodrich, chairman of the Board of Directors, which convened at Kansas City February 2-4, drew a crowd of 900 and a galaxy of modern equipment. The country's \$3 billion poultry industry displayed its ambitions, its dimensions, and its ramifications, together with the solidarity of its centralized organization—the Institute. The didactic program and exhibits representing many phases of poultry production and marketing must be left for the Institute to describe. However, the fact that eviscerated poultry demonstrations stole the show has to be told here—SRO (standing room only) indicated the trend toward reforming the hygiene of market poultry. The overall picture of the conference was that the fact-finders found there is work ahead to keep poultry production on a sound footing.

## Manitoba

**Nation-wide Veterinary Direction.**—The indifference of the Dominion Government toward provincial problems brought to its attention is pointed out as a flaw in the veterinary service of Canada by Dr. Alfred Savage of the Manitoba Agricultural College. Recent refusals on the part of the government to come to the aid of the local authorities are cited. A request for aid in the diagnosis of disease of horses apparently due to drought brought a promise but no action. Blame is pinned on the lay direction which heads the science service. The request for a decision on the use of a living vaccine for fox distemper led to a decision quite as ridiculous as the claim that placing the science service under the direction of laymen was an improvement.—*From the Journal of Comparative Medicine and Veterinary Science, 11, (Jan., 1947): 28.*

## Maryland

**Fire Delays Production.**—A few weeks ago, the first floor of the three-story building of the Baltimore Wire and Iron Works, steel cage manufacturers, was damaged by fire. The office was completely destroyed, including some valuable records. In view of the time required for repairs, the company has moved to new quarters at 510-12 N. Jasper St. and has resumed normal production of some products. However, the loss of steel sheets and electrical equipment and parts has set back production of Dog Dryers for another sixty days at least, it is reported.

## Massachusetts

**Association Meetings.**—The Massachusetts Veterinary Association met at the Hotel Statler in Boston on March 27. The guest speakers at the dinner meeting were Dr. Francis X. Maguire, East Walpole, who spoke on "Large Animal Practice;" and Dr. Joseph B. Engle, Summit, N. J., whose subject was "Penicillin Therapy in Canine Practice." A sound film, "The Inside of a Dog's Stomach," recently featured in *Life* magazine, was presented through the courtesy of the Wyatt Company.

The April 17 meeting of the Association, the last one to be held in Boston until October, featured three speakers. Dr. C. C. Ellis, extension poultry pathologist, Massachusetts State College, Amherst, presented a film on Newcastle disease (pneumoencephalitis). Dr. R. S. Youmans, of Lawrence, spoke on "Some Aspects of Large Animal Practice." Dr. Edwin R. Blamey, New York City, chief veterinarian for the American Kennel Club, discussed "The Dog Show and the Veterinarian."

S/E. A. WOELFFER, *Secretary.*

## Michigan

**Western Association.**—Dr. and Mrs. B. C. Hekhuis were host and hostess at the monthly meeting of the Western Michigan Veterinary Medical Association in Grand Rapids on March 20. The Rev. Ward of Cooperstown discussed his hobbies, the collection of stamps, buttons, beetles, butterflies, bird nests and eggs, and Indian relics. Mr. Tom Hynes explained the health and accident insurance for veterinarians. A general discussion and business meeting followed. Forty-four veterinarians and their wives attended.

S/FRANK THORP, JR.

## Minnesota

**Southern Association.**—The Southern Minnesota Veterinary Association met on April 24 at the home of Mr. Jay C. Hormel, Austin. Following a dinner at the Austin Country Club, Dr. George A. Young, Jr., of the Hormel Institute, spoke on the research studies conducted with the Hormel Foundation swine herd on so-called "baby pig disease."

S/KARL KNOCH, *Secretary.*

## Missouri

**Kansas City Association.**—The regular meeting of the Kansas City Veterinary Medical

Association was held at the Hotel Continental on March 18. Dr. S. W. Haigler of St. Louis, a member of the executive board of the American Animal Hospital Association, spoke on "Some Everyday Problems Presented to the Small Animal Practitioner." A forum on case reports and a general discussion completed the program.

S/GAIL B. SMITH, *Secretary.*

**Personal.**—Dr. Richard C. Brager of Kansas City is now assisting in small animal practice at Dr. H. W. Young's hospital in Kansas City.

**St. Louis Association.**—Dr. and Mrs. Wayne H. Riser, Evanston, Ill., were guests of the Greater St. Louis Veterinary Medical Association at its April 4 meeting at the Roosevelt Hotel in St. Louis. Dr. Riser, associate editor of *The North American Veterinarian*, spoke on "Newer Aspects of Surgery and Pathology in Small Animal Medicine" and illustrated his message with pictures.

S/C. W. DARBY, *Secretary.*

**Centralization of Artificial Insemination.**—The federation of artificial insemination societies was proposed by University of Missouri delegates to the 1946 meeting of American Society of Animal Production held in Chicago. A federation of the state societies of Missouri was formed in 1945. The various advantages of national cooperation which were pointed out included schools for training men in the technique of that art in dairy cattle.

## Nebraska

**Farm-Animal Health.**—Says Dr. W. T. Spencer in his 1946 report to the National Livestock Loss Prevention Board, "Omaha, for the tenth consecutive year, again leads the large livestock markets in having the lowest percentage of cattle condemned on account of tuberculosis." Out of 756,745 cattle slaughtered, only 13 carcasses were condemned and 5 of these were passed for sterilization. "This record didn't just happen," the Doctor adds. Diseased animals are traced back to the place of origin for attention to the cause.

## New Jersey

**Artificial Insemination No Novelty.**—Reviewing the status of artificial insemination societies, E. J. Perry, New Jersey State College (*Hoard's Dairyman*, March 10, 1947), accents that while a few of the societies are standing still most of them are making steady progress through increasing experience on the selection, handling, and feeding of bulls, including the use of supplementary vitamins and proteins. One of the headaches is infertility not distinguishable by the usual examinations. Centralization of the societies as is done in several states has various advantages, not the least of which are the clearing of information about the merits of the bulls and periodic laboratory checks, not to mention the collecting of the experiences of others on all phases pertaining to the enterprise.



## New York

**New York City Association.**—The Veterinary Medical Association of New York City held its regular meeting at the Hotel Pennsylvania on March 5. An illustrated "Symposium on Veterinary Orthopedics" featured as speakers Dr. Erwin F. Schroeder, chief of staff, Angell Memorial Hospital, Boston, Mass.; Dr. Ellis P. Leonard, Summit, N. J.; and Dr. Otto Stader, Ardmore, Pa. The motion picture, "The Use of the Stader Splint in Treating Fractures in Small Animals," was shown.

The Association met at the Hotel Pennsylvania on April 2. The subject for the meeting was "Virus Diseases of Cats." Dr. James A. Baker, Rockefeller Institute for Medical Research, Princeton, N. J., and Dr. J. A. S. Millar, Deal, N. J., were guest speakers.

s/C. R. SCHROEDER, *Secretary*.

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**Two-Mile Trot.**—The Two-Mile Trot announced by the Roosevelt Raceway for August 22 and the Nassau Two-Mile Pace for September 5 are sufficiently rare in the annals of the American turf to be mentioned as outstanding events of the coming racing season. It forecasts a trend toward longer races,—the European pattern which puts usefulness through endurance above mere speed in short races.

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**Personal.**—Dr. B. A. Linden (CORN '41) has been appointed city veterinarian for New Rochelle. In addition to this service, Dr. Linden maintains a general practice and animal hospital in that city.

• • •  
**Personal.**—Dr. Sidney L. King (OSU '38), Suffern, spoke before the Rockland County Dairy Goat Association in February on the subject, "Diseases of Dairy Goats."

## Ohio

**Initiation Ceremony.**—The Delta chapter of Phi Zeta, national veterinary honorary society, held its annual initiation and banquet at The Ohio State University on March 3. Dean Walter R. Krill of the College of Veterinary Medicine, president of the chapter, presided as toastmaster at the banquet. Dr. Paul C. Kitchin of the College of Dentistry addressed the members.

Dr. S. L. Saylor of Canal Winchester was admitted to honorary membership. The nine new active members are: Robert F. Batchelor, Warren E. Amling, Richard L. Hall, Wayne E. Sharp, George W. Neikirk, Frederick K. Metzger, Richard S. Light, Horace N. Davis, and William J. Hadlow.

The new officers for the coming year are: Dr. John H. Helwig, *president*; Mr. Horace N. Davis, *vice-president*; and Dr. F. R. Koutz, *secretary-treasurer*.

s/F. R. KOUTZ, *Secretary*.

• • •  
**New Faculty Member.**—Dr. W. L. Ingalls (OSU '42) has returned to The Ohio State University College of Veterinary Medicine as instructor in pathology, after five years of research at the state laboratory at Reynoldsburg and the Virginia Agricultural Experiment Station.

## Pennsylvania

**Bucks-Montgomery Association.**—The Bucks-Montgomery Veterinary Medical Association met in Doylestown on March 12. Dr. C. P. Bishop, director of the Bureau of Animal Industry, Harrisburg, spoke on "Control of Brucellosis in Cattle and Vaccination."

At the April 9 meeting of the Association, held at the Moose Home in Doylestown, Dr. R. N. G. Darby, practitioner from Somerville, N. J., spoke on "Sterility in Cattle, and Treatments."

s/J. G. SHUTE, *Secretary*.

## Tennessee

**Annual Meeting.**—The thirty-ninth annual meeting of the Tennessee Veterinary Medical Association was held at the Noel Hotel, Nashville, on Jan. 13-14, 1947. The following speakers were featured on the program: Dr. F. G. Schell, Franklin; Dr. A. A. McMurray, Nashville; Dr. G. D. Ingram, Florence, Ala.; Dr. W. M. Coffee, LaCenter, Ky.; Dr. R. S. Sugg, Auburn, Ala.; Mr. C. E. Van Cleve, agricultural commissioner, Nashville; Dr. J. L. Topmiller, Nashville; Dr. C. E. Kord, Nashville; and Dr. A. H. Groth, Auburn, Ala.

The officers for 1947-1948 are: Dr. R. E. Bauch, Knoxville, *president*; Dr. W. O. Green, Nashville, and Dr. W. R. Lawrence, *first and second vice-presidents*; and Dr. H. W. Nance, *secretary-treasurer*.

s/H. W. NANCE, *Secretary*.

## Washington

**Dr. Nichols Appointed Dean.**—On April 22, 1947, the Board of Regents of Washington State College, Pullman, announced the appointment of Dr. R. E. Nichols, formerly assistant professor in the Department of Veterinary Science,



Dr. R. E. Nichols

Purdue University, Lafayette, Ind., as dean of the College of Veterinary Medicine, effective May 1, 1947.

Dr. Nichols received his D. V. M. from the Ontario Veterinary College in 1933, an M. S. and Ph.D. in 1934 and 1941, respectively, from

The Ohio State University, and in 1941 a D.V.S. from the University of Toronto. From 1934 to 1941, he was assistant and instructor in surgery in the College of Veterinary Medicine, The Ohio State University. From 1942 to 1945, he served as captain in the Army Veterinary Corps.

A member of the AVMA, he is also a member of a number of scientific societies and associations. He is 38 years of age, married, and has two children.

Dr. Nichols succeeds Dr. E. E. Wegner, who, after more than thirty years of service, has been appointed professor of surgery in the College of Veterinary Medicine. It is expected that Dr. Wegner will engage also in research studies which he has hoped to undertake for many years. Under his administration, the housing of the College has been greatly improved, the staff has been expanded, and the facilities for teaching and research substantially increased. The Board announces that construction has started on a fourth building for the College of Veterinary Medicine, which will be used as the poultry disease laboratory.

### Wisconsin

**New Mink Mutations.**—Burgundy fox and several other innovations in silver fox and mink production are announced by Fromm Bros. fur farm at Thiensville. The mutations developed by scientific breeding of fur-bearing animals have put the growers another step ahead of the old trappers.

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**Southwest Association.**—The Southwest Wisconsin Veterinary Medical Association met in Richland Center on March 27, 1947. Dr. R. Fenstermacher of the University of Minnesota spoke on "Newcastle Disease [pneumoencephalitis] in Poultry," and a discussion followed. After a dinner at the Park Hotel, the evening program featured Dr. Francis L. Brewer, who spoke on "Responsibilities of a Veterinarian to His Community."

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**New Livestock Sanitation Chief.**—Dr. John T. Schwab, Oconomowoc, has been named chief of the Division of Livestock Sanitation, Wisconsin Department of Agriculture. He will begin his work on July 1, 1947, succeeding Dr. V. S. Larson, chief of the division since 1938. Dr. Schwab attended the University of Wisconsin for three years as a preveterinary student and, following military service in World War I, graduated with the D. V. M. degree from St. Joseph Veterinary College, St. Joseph, Mo., in 1923. He was resident veterinarian at the Pabst farms until 1927, when he entered general practice at Oconomowoc.

Dr. Larson, retiring at his own request after thirty-five years of service to the state, will assume the duties of the state humane agent. He succeeds Dr. O. H. Eliason, who will retire after thirty-two years of service.

## FOREIGN

### Argentina

**Dr. Houssay to Receive APMA Research Award.**—Dr. Bernardo Alberto Houssay of Buenos Aires received the first annual research award of the American Pharmaceutical Manufacturers' Association at a presentation at Boca Raton, Fla., April 28, 1947. Dr. Houssay, professor of physiology at the Medical School of the University of Buenos Aires, is an authority on the interrelationships of the various hormones, and is particularly noted for furthering medical knowledge of the pituitary gland.

### Australia

**Wool Paradise.**—At the annual meeting of the American Society of Animal Production last year, Prof. J. W. Wilson, University of California, pointed out that Australia (pop. 7.5 million) had 16 times more sheep than people, and by far the best wool-clip in the world, best in respect to kind and quantity due to rigid standards imposed in wool rather than lamb production. The sheep of South Australia shear an average as high as 22 lb.

### France

**Pasteur Anniversary.**—Observance of the fiftieth anniversary of the death of Louis Pasteur took place in Paris, Nov. 18-25, 1947, in the form of a congress of scientists. The program, covering a wide range of scientific theses, included a visit to the laboratory of the Pasteur Institute at Garche and an exhibition of the work of Pasteur at the *Palais de Découverte, avenue de Président-Roosevelt*, a pilgrimage to Dole and Artois, birthplace of Pasteur, and a public reception sponsored by the municipality of Paris. Foreign countries represented on the program were: Argentina, Russia, Great Britain, Denmark, Holland, and the United States. Dr. W. M. Stanley, Rockefeller Institute of Medical Research, spoke on "Viruses and Bacteriophages," and Prof. Michael Heidelberger on "Immunity." Veterinary diseases were discussed.

### India

**Pasteurellosis in Calves.**—Dr. Arlan W. McClurkin (KSC '43), of the Agricultural Institute, Allahabad, U. P., reports a high mortality in the calves born in that area during the month of January. The cause appeared to be pasteurellosis. The use of large doses of antiserum, supplied by the government at low cost, has stopped the spread of the disease among calves exposed. Until climatic conditions changed, all newborn calves were being injected with the antiserum. The most susceptible group seemed to be those from birth up to 8 weeks of age.

### Italy

**Veterinary Commission.**—At the beginning of 1947, a special veterinary commission was

constituted in Rome by the National Council of Research, which directs all scientific progress in Italy. Officers of that commission are: Prof. F. Usuelli, professor of Zootechnics, University of Milan, *president*; Prof. V. Zavagli, director of the Roma-Capannelle experiment station, *vice-president*; and Prof. V. Mazzaracchio, *chief* of the veterinary laboratory at the National Institute of Public Health, Rome, *secretary*. Other members are Professors T. Bonadonna, A. Lanfranchi, A. Messieri, A. Mirri, D. Nai, P. Stazzi, and B. Ubertini.

This commission has the authority to organize veterinary research in Italy and to collaborate with foreign scientists for veterinary progress.

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## Mexico

**Inter-American Brucellosis Congress.**—The Congress was held in Mexico City on Oct. 28—Nov. 2, 1946. Delegates from nearly all of the American countries were present. The increasing incidence of the disease reported was said not to be due to better means of diagnosis, as sometimes supposed, but to a real increase of the infection. Dr. I. Forest Huddleson pointed out that, after ambitious attempts to suppress bovine brucellosis in the U.S.A., the infection remained as extensive as before and, moreover, to the cases of bovine origin, the *melitensis* infections must be added. Pasteurization of milk has not been sufficient to stop the disease. Man-to-man infection must be considered. Due to the adaptability of *Brucella*, the caprine organism (*melitensis*) has been adapted to cattle. Human strains and canine strains may be expected.

The disease in the city of Mexico is mainly related to goat's milk, cheese, and butter. Comparable reports came from various countries represented (Argentina, Brazil, Colombia, Central America, Cuba, Puerto Rico). The program comprised revealing discussions of the bacteriology, diagnosis, clinical pictures, hematology, vaccination, therapy, control, and other studies. Summed up, the conclusion to be drawn from this recent assemblage of outstanding specialists of American countries is that brucellosis has become a grave, widespread malady without any early promise of its control.—*Condensed report of the Mexican correspondent to the Journal of the American Medical Association, March 18, 1947:798-799.*

## Philippine Islands

**War Tetanus.**—After the fighting in and around Manila in 1945, a report of the U. S. Army Medical Corps showed 156 cases of tetanus out of 1,100 wounded civilians treated at the San Lazaro Hospital, with a mortality of 90 per cent. A later report involving 12,000 patients showed 40 cases per 1,000, with a mortality of 82.1 per cent. The peacetime incidence of tetanus in Manila ranged from 75 to 100 annually.

Meanwhile, tetanus among wounded American soldiers was negligible. Two cases in soldiers who had not received a booster dose of tetanus toxoid sums up the virtue of tetanus immunization.

## Scotland

**Fined for Violating Livestock Order.**—A Stirling court recently fined a Dunblane farmer £2 for allowing calves to have access to uncooked garbage. This was the first prosecution under a foot-and-mouth disease order which requires that swill, especially bones and carcasses, be boiled if livestock are likely to come in contact with it.—*Vet. Rec., March 8, 1947.*

## COMING MEETINGS

American Society for the Study of Sterility. Hotel Strand, Atlantic City, N. J., June 7-8, 1947. John O. Haman, M.D., 490 Post St., San Rafael, Calif., secretary.

Missouri Veterinary Medical Association. Hotel Missouri, Jefferson City, Mo., June 9-10, 1947. J. L. Wells, 1817 Holmes St., Kansas City 8, Mo., secretary.

Ohio State University. Annual Conference for Veterinarians. College of Veterinary Medicine, Ohio State University, Columbus, June 11-12-13, 1947. Walter R. Krill, College of Veterinary Medicine, dean.

California State Veterinary Medical Association. San Diego, Calif., June 23-25, 1947. Floyd H. White, Grand Ave. at Third St., San Rafael, Calif., secretary.

Michigan State Veterinary Medical Association. Olds Hotel, Lansing, Mich., June 24-25, 1947. B. J. Killham, School of Veterinary Medicine, Michigan State College, East Lansing, Mich., secretary.

North Carolina State Veterinary Medical Association in conjunction with the South Carolina Association of Veterinarians. Hotel Charlotte, Charlotte, N. Car., June 25-26, 1947. J. H. Brown, Tarboro, N. Car., secretary-treasurer.

American Veterinary Medical Association. Eighty-fourth Annual Session, Netherland Plaza Hotel, Cincinnati, Ohio, Aug. 18-21, 1947. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Purdue University. Annual Short Course for Veterinarians. Purdue University, Lafayette, Ind., Oct. 1-3, 1947. C. R. Donham, Dept. of Veterinary Science, Purdue University, head.

Eastern Iowa Veterinary Association, Inc. Hotel Montrose, Cedar Rapids, Iowa, Oct. 14-15, 1947. Laurence P. Scott, P. O. Box 325, Waterloo, Iowa, secretary.

Southern Veterinary Medical Association. Roosevelt Hotel New Orleans, La., Nov. 17-19, 1947. A. A. Husman, 320 Agricultural Bldg., Raleigh, N. Car., secretary.

Chicago Veterinary Medical Association. Palmer House, Chicago, Ill., the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill. secretary.



Massachusetts Veterinary Association. Hotel Statler, Boston, Mass., the fourth Wednesday of each month. E. A. Woelffer, c/o A. P. Hood & Sons, Boston, Mass., secretary-treasurer.

New York City Veterinary Medical Association. Hotel Pennsylvania, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Saint Louis District Meetings, Roosevelt Hotel, St. Louis, Mo., the first Friday of each month. C. W. Darby, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association. Houston, Tex., the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

## STATE BOARD EXAMINATIONS

**Florida**—The Florida State Board of Veterinary Examiners will hold an examination on June 23-25, 1947, at the Hotel Mayflower, Jacksonville, Fla. Address inquiries to Dr. H. C. Nichols, secretary of the board, Box 405, Ocala, Fla.

**Iowa**—The Iowa Veterinary Medical Examining Board will hold examinations for licensing on June 16-17, 1947. Applicants are asked to be in the office of the Division of Animal Industry, State House, Des Moines, not later than 8:00 a. m., on June 16. Address inquiries to Dr. C. C. Franks, chief, Division of Animal Industry, State House, Des Moines 19, Iowa.

**Massachusetts**—The Massachusetts Board of Registration in Veterinary Medicine will hold examinations for registration in this state on June 12-14, 1947, at Amherst, Mass. The latest date for filing applications is May 29, 1947. Address inquiries to Dr. B. S. Killian, secretary, Board of Registration in Veterinary Medicine, Room 413-N, State House, Boston 33, Mass.

## VETERINARY MILITARY SERVICE

### Peru Decorates U. S. Army Veterinarian

In a recent special ceremony and luncheon at the Peruvian Army Military Club in Lima, the chief of staff of the Peruvian Army conferred the decoration of the Order of Ayacucho on Lt. Col. Russell McNellis of the U. S. Army Veterinary Corps, for his outstanding services to Peru.

This officer has served in Peru continuously for more than five years and, due largely to his efforts, a U. S. Military Mission was established in Peru. Colonel McNellis performed an outstanding work in organizing the Peruvian Army Remount Service and the Veterinary Service and aided in creating a veterinary college in Peru.

He sailed for the United States on March 12. His new station has not been announced to date.

## Awards and Citations

**Captain John Bentinck-Smith**, V. C., Boston, Mass., was awarded the Army Commendation Ribbon for meritorious service during the period from Nov. 1, 1945, to Dec. 16, 1946.

## BIRTHS

To Dr. (CORN '40) and Mrs. Herbert Shear, 18 Manor Road, Springfield 9, Mass., a daughter, Laura Jean, Feb. 18, 1947.

To Dr. (TEX '43) and Mrs. H. J. Magrane, II, R. R. 2, Mishawaka, Ind., a son, Bruce J., Feb. 19, 1947.

To Dr. (API '45) and Mrs. A. J. Headrick, P. O. Box 34, Murphy, N. Car., a daughter, Mary Jennings, March 5, 1947.

To Dr. (CORN '35) and Mrs. Edwin N. Foster, 1833 Cornaga Ave., Far Rockaway, N. Y., a daughter, Joan Ann, March 6, 1947.

To Dr. (KSC '42) and Mrs. Arthur A. Case, College of Veterinary Medicine, Ohio State University, Columbus 10, Ohio, a son, Daniel Fairman, March 19, 1947.

To Dr. (TEX '43) and Mrs. R. D. Macy, 115 E. Whittier Blvd., Whittier, Calif., a son, James Allen, March 19, 1947.

## DEATHS

★**Roger F. Bolenbaker** (CORN '16), 50, El Centro, Calif., died Dec. 26, 1946. Dr. Bolenbaker had been a member of the AVMA since 1937.

**Charles Greenhaus** (CVC '19), 53, New York, N. Y., died Feb. 1, 1947. After his graduation from Chicago Veterinary College, Dr. Greenhaus joined the New Jersey meat inspection force, was transferred to California in 1923, and in 1924 was reassigned to New York, where he held the position of supervisor at the time of his death.

★**Wilford J. Luries** (TEX '43), 26, Forreston, Ill., died in February, 1947. Dr. Luries was admitted to the AVMA in 1943.

**E. L. Morgenroth** (CVC '93), 80, Kewaskum, Wis., died March 13, 1947, following a stroke. Dr. Morgenroth had practiced at Boltonville, Wis., for twenty years before coming to Kewaskum, where he had practiced for thirty-two years until his retirement a year ago. He was an active figure in civic as well as professional life, having served as president of his village, president of the school board, and president of the Wisconsin Veterinary Medical Association.

★**C. W. Rippetoe** (KSC '34), 33, Kansas City, Kan., died early in 1947. Major Rippetoe was admitted to the AVMA in 1937.

★**L. D. Shannon** (ISC '27), 42, Rhinelander, Wis., died March 5, 1947, following a heart attack. Dr. Shannon had been a federal veterinarian for northeastern Wisconsin for the past twelve years. He was admitted to the AVMA in 1927.

★Indicates member of the AVMA.

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